DIGITAL TECHNOLOGIES AND PHOTOGRAPHIC ARCHIVES
BIRMINGHAM CENTRAL LIBRARY: A CASE STUDY

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1 March 2001

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ABSTRACT

This thesis considers the use and potential of digital technologies for those responsible for photographic collections in public libraries. Using the Birmingham Central Library as a case study, the research has explored how information communication technologies have impacted on the way in which photographic images are created, stored and disseminated.

The study provides an overview of both the British library service and the role of archives within this public provision. Following an examination of the characteristics of digital media and a range of issues relating to the preservation, dissemination and economic exploitation of photographic materials in digital form, the thesis goes on to adopt a variety of research strategies, including a number of empirical projects used to assimilate information relating to the practical application of information communication technologies by those working in public libraries.

The major outcome of the research, identified in the later sections of the thesis, has been to make a unique contribution to the field of knowledge relating to the provision of digital resources by those responsible for photographic collections residing in archives within public libraries in the United Kingdom. The conclusions to emerge from the theoretical and empirical research contribute to knowledge by providing current information about the utilisation of digital technologies for the purposes of enhancing access to photographic material held within public library archives, whilst also considering possible future developments relating to the area of investigation.

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LIST OF APPENDICES

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Glossary of Definitions and Abbreviations

ARPA	United States Department of Defence Advanced Research Projects Agency
BAPLA	British Association of Picture Libraries and Agencies
BBC	British Broadcasting Corporation
BLRIC	British Library Research and Innovation Centre
BLS	Birmingham Library Services
BMAG	Birmingham Museums and Art Gallery
BST	British Summer Time
CCD	Charged Coupled Device
CD	Compact Disc
CD I	Compact Disc Interactive
CD ROM	Compact Disc Read Only Memory
CEO	Chief Executive Officer
CERN	Conseil Europeen pour la Recherche Nucleaire (European Laboratory for Particle Physics)
CLIR	Council on Library and Information Resources
CNPC	Committee of National Photographic Collections
CPA	Commission on Preservation and Access
DNH	Department of National Heritage
DVD	Digital Versatile Disc
EARL	Electronic Access to Resources in Libraries
ECPA	European Commission on Preservation and Access
EDD	Economic Development Department
EDT	Eastern Daylight Time
ELDA	European Laser Disc Association
eLIB	Electronic Libraries Programme

EU	European Union
FTP	File Transfer Protocol
HE	Higher Education
HELIX	Higher Education Library for Image Exchange
HLF	Heritage Lottery Fund
HTML	Hypertext Mark-up Language
HTTP	Hypertext Transfer Protocol
ICT	Information Communication Technology
IP	Internet Protocol
IRA	Irish Republican Army
ISDN	Integrated Services Data Network
ISO	International Standards Organisation
IT	Information Technology
JISC	Joint Information and Services Committee
LIC	Library and Information Commission
MIDRIB	Medical Images: Digitised Reference Information Bank
NBA	Net Book Agreement
NCSA	National Centre for Super computing Applications
NMPFT	National Museum of Photography Film and Television
NOF	New Opportunities Fund
PC	Personal Computer
PLA	Public Library Authority
PLIS	Public Libraries and the Information Society Study
PRO	Public Records Office
RAB	Regional Arts Board
TCP	Transmission Control Protocol
UK	United Kingdom

UKOLN	United Kingdom Office for Library and Information Networking
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation
URL	Universal Resource Locator
USA	United States of America
VCR	Video Cassette Recorder
VDU	Video Display Unit
WIPO	World Intellectual Property Organisation
WMA	West Midlands Arts
WPS	Warwickshire Photographic Society

INTRODUCTION

Digital Technologies and Photographic Archives

Birmingham Central Library: A Case Study

Shall I compare thee to a summer's day?
Thou art more lovely and more temperate.
Rough winds do shake the darling buds of May,
And summer's lease hath all too short a date.
Sometime too hot the eye of heaven shines,
And often is his gold complexion dimmed,
And every fair from fair sometime declines,
By chance or nature's changing course untrimmed;
But thy eternal summer shall not fade
Nor lose possession of that fair thou ow'st,
Nor shall death brag thou wander'st in his shade
When in eternal lines to time thou grow'st.
So long as the magnetic flux on this disk has not been disturbed,
And as long as humans retain the appropriate size and speed disk drives
And so long as they have hardware controllers
And software device drivers capable of reading the bits from this disk,
And so long as they have access to the software
That encoded the file structure and character codes
Employed in the bit stream of this document,
And so long as they can still find or recreate the computing environment
Necessary to run that software,

And so long as man can breathe or eyes can see...
So long lives this, and this gives life to thee.

(Rothenberg 1998)

This research examines how the work of photographic archivists is being influenced by advancements in digital technologies. Whilst primarily concerned with those archives owned and controlled by the public library service in the United Kingdom, the research has been specifically informed and directed by work undertaken by the Birmingham Library Service (BLS). Using the Birmingham Central Library as a case study, the research is concerned with the adoption of those digital technologies which are changing the way photographic images are acquired, preserved and disseminated.

Van Houweling and McGill reiterate the importance that digital technologies are having on the processing of information, describing digitisation as

> ... the single fundamental theme underlying modern data communications networks and their usefulness. Images, speech, music, diagrams, and the written word can all be translated into a sequences of numbers. That sequence can be stored, processed and/or transmitted. At the other end of the process, the numbers can be interpreted to recreate information in the form in which it was originally expressed. Since computers are able to manipulate digitised information, advances in computer technology are now applicable to information of all types, and all types of information can be transported on data communications networks.

(Van Houweling and McGill 1993: 3)

Although the emphasis of the research has been to consider the *implications* of using the technologies described by Van Houweling and McGill, explanations of *how* particular technologies work are provided where that understanding informs the observations about their use. That these implications are far reached and profound is manifest. Recalling Benjamin, Mitchell eloquently states "The age of digital replication is superseding the age of mechanical reproduction" (Mitchell 1994: 52). The digital replication (and creation) of photographic images has led to the formulation and introduction of many new archival and curatorial practices. As Ostrow observes, however, with such practices come new dangers - not least those associated with the practicalities of digitising an extensive photographic archive.

> To limit digital access within a collection only to selected images, rather than to the entire corpus, undermines the documentary function of historical pictorial collections, whose cardinal strengths derives from their completeness.
>
> (Ostrow 1998: 18)

Further to Ostrow's theme of selectivity and the digitisation process, Seigdel identifies additional dangers in his recollection of the activities at the Archivo General de Indias in Seville. Seigdel recalls that this repository

> ... harbours hundreds of thousands of historical sources, in the form of decrees, instructions, letters, regulations, case records, maps, petitions from Indian chiefs, etc, which refer to the historical ties between Spain and its former colonies in Latin America. The whole archive is now being digitised. The manuscripts are being recorded on interactive, optical video disc, not only to protect the original collection, but also to increase their accessibility for the researcher: the documents, discoloured by time, can be 'cleaned' on the screen via the computer - stains can be removed, creases smoothed out, colours changed, letters enlarged or reduced, etc ... In a way, a 'contaminated' and guilt-laden episode of history is being

> relieved of its blood, sweat and tears and being given a false air of innocence. In the unbearable lightness of the realm of data, things are being relieved of their stoutness and weightiness: as 'bits' and 'bytes' they all look the same. It is not about whether the originals speak the truth, but about their disappearance into a retouchable 'image': the act of copying makes the original artificial , too. At the same time, the 'real thing', having become inaccessible, is entrenched in secrecy for fear that it will be touched by life, so that its existence becomes insignificant.
>
> (Seigdel 1994)

Through this description of digitisation - which ultimately leads to "things ... being relieved of their stoutness and weightiness," - Seigdel highlights the problematic nature of the process that is currently preoccupying many within the library and archival fraternities.

Policy Statements

Although intrigued by the possibilities associated with the digitisation of original artefacts, many within the library and archival professions have only recently begun to address the many significant implications of digitally copying and disseminating material highlighted by Ostrow and Seigdel. This consideration has been reflected in the number of policy statements and papers published in recent years.

In 1997 the authors of the Department of National Heritage publication *Reading the Future: Public Libraries Review* placed the impact of information technology as the single most important change to occur in public libraries (DNH 1997a). Perceived as an important statement in reflecting the aspiration to provide maximum access to electronically stored knowledge and information, the review identified a number of steps to make the delivering of

the benefits of information communication technology to the wider population a reality. The publication highlighted the need for the range of material available in digitised form to be increased, along with the creation of an information technology network, with electronic links allowing for transmission of material between libraries and their users. The review also noted the importance of information provided by public libraries as potential content for an information network, including reference collections, business, public and community information.

Carrying forward the Review's theme of universal access through an information network, the Library and Information Commission's *2020 Vision* brought to the fore the role of content. Stating that the UK will "play a leading role in the dominant global information economy ... through creating a digital library of the UK's heritage of culture and innovation ..." the authors also recognised the role of library and information services as "the memory of society through collecting and preserving knowledge" (LIC 1997: 5).

Considered in more detail in later sections of this text, the issues and themes concerning digitisation examined in the Library and Information Commission's (LIC) 1997 *New Library* report were consolidated in the 1998 LIC publication *Building the New Library Network.* The *New Library Report* specifically singled out local history collections as amenable to digitisation in order to ...

> ... make these resources more widely accessible, and ... facilitate the security and conservation of the original, often inherently valuable, documents. In this area content to be delivered will include: unique local collections networked nationally; digitised collections of archives such as records of births, marriages and deaths and local newspapers;

> digitised collections of maps and photographs of street, villages, towns and cities...
>
> (New Library 1997: 15)

During this time relevant policies for the archives and museums sectors were also published. New technology was considered by the authors of the Museums Association 1996 document *The National Strategy for Museums: The Museum's Association's recommendations for government action,* whilst the *Treasures in Trust* policy document published by the Department of National Heritage in the same year specifically addressed the areas of digital technology and the digitisation of museum catalogues and images of artefacts.

It could be argued that by being hitherto cautious in their response to the rhetoric of those commentators who have extolled the virtues of digitisation and the use of telematics - typically referring to the "openness, freedom and tolerance pervading the collective consciousness of the community of ... users" (Fernback 1997: 47) - librarians and archivists have, albeit inadvertently, contributed to the creation of a society that many believe is becoming increasingly divided as a result of the disparity in the use of such technologies. It is apparent that although many expectations about the utilisation of these technologies have yet to be realised, in the foreseeable future the widespread use of digital communications systems will be common.

Technological Developments

The library profession is considering and implementing the adoption of digital technologies amidst the context of considerable developments in the infrastructure of the systems that allow digitised information content to be delivered. Highly visible through mass advertising campaigns, at the

forefront of these changes in the UK has been the marketing and take up of digital terrestrial television. Whilst a number of systems have been launched, each shares the same ability to broadcast high quality pictures and sound, in addition to providing access to networked services, including components of the Internet. Although the full capabilities of interactive media are still being realised in the UK, digital technologies are allowing access to new forms of services and content in many communities elsewhere. In 1997 the Swedish Post Office launched a nation-wide intranet, enabling each of its nine million customers to have a personalised e-mail address. It is likely that comparable systems will be introduced in UK in the future. In the meantime, librarians and archivists must give priority to a range of issues which will enable their users to be empowered by the adoption of information communication technologies: they must consider which users would benefit from the use of such technology and the nature of the projects undertaken with them.

Although those responsible for the custody of the photographic archive at Birmingham Central Library will in future derive many benefits from using information communications technologies, their use will require new strategies to be adopted to protect the data created from both technical failures and malevolent human intervention. Such technologies are vulnerable to costly and disruptive malfunction and unless alternative back up systems are provided the effectiveness of the Library's work could be seriously undermined. (In recent years a number of well publicised failures in computer systems have occurred, including problems at the Benefits Agency, the Passport Office and the Scottish Qualifications Authority.) Whilst hardware and software are susceptible to a range of potential problems, a report published by the National Computer Security Association indicated that in 1996 computer viruses alone caused difficulties for 99% of companies in the

United Kingdom.[1]

In addition to the myriad technical considerations associated with the digitisation process, the library profession has to strike a careful balance between ensuring that the material under its control is not in any way exploited and the legitimate needs of the majority of library users. The capability of technically proficient individuals to compromise the integrity of information resources should not be undermined. In 1994 Citibank had $10 million electronically plundered by hackers operating from remote sites (*The Guardian* December 7, 1996). This same expertise could, in theory, be applied to the illegal acquisition of resources held by libraries. Many commentators believe that the role of the hacker is an ambivalent one, suggesting that

> ...hackers occupy a unique position within the computer mediated communications collective culture as a subculture of rebels and as protectors of civil liberties and the democratic right to openness and freedom.
>
> (Fernback 1997: 52)

Whatever their motivations, information technology professionals within libraries are pitted against the (often adolescent) capabilities of highly skilled users - and potential abusers. That these capabilities should be taken seriously is clear. The Dutch Web site, *Xs4all*, is now legally operated by a group of hackers who at the time of its original creation were initially amongst the only individuals with the skills to produce a contents rich site within Holland (*The Guardian* August 14, 1997).

By adopting digital technologies in order to exploit its photographic

1 Capable of compromising computer systems in a number of ways, a virus can create unwanted dialogue boxes and reduce available memory. A so called *Trojan Horse* virus, hidden within a program, appeared in early 1997 when several web sites offered "free" access to pornographic pictures if users downloaded a special program to view them. The program then disconnected the users from the Internet, "... silenced their modem's speaker, and dialled a premium rate or Third World number. For the entire time they were on-line, users paid peak telephone rates." *The Guardian* May 8, 1997.

archive, staff working for the Birmingham Library Service may in future be able to empower individuals through the use of those systems that allow communication and interaction to occur across geographical boundaries. Here, though, custodians of public resources face a paradox in being able to facilitate both their local users and others perhaps many thousands of miles away. This is particularly problematic for libraries which have a defined role in addressing the needs of their local constituents. "It is ... accurate to say that libraries in general reflect and respond to the social demographics of the district in which they are located - a truism perhaps, but nevertheless important to reassert" (Greenhalgh and Worpole 1995: 40). This truism becomes diluted when libraries engage with telematics technologies. A child in south Birmingham with no access to a networked computer would not be empowered to view digitised photographs from the Central Library's archives, whereas a child in Western Australia, who does have access to such technology, would. Are staff at the Central Library, as elsewhere, actually "reflecting and responding to the social demographics" of their area by empowering a school child in Meekatharra as opposed to Moseley? As long as the provision of public library resources remain yoked to local funding, arguments relating to the validity of undertaking both national, and potentially global, projects will remain. As a repository of photographic material that is of significant national and historical importance, it could be argued that the Central Library in Birmingham is in a sense a "special" case - it is therefore "valid" to promote the collections nationally and internationally through the use of telematics.

This research has been undertaken during a formative period in the evolution of digital technologies. As the events recalled in **Chapter Two** highlight, this has been particularly true where on-line technologies are considered. Although only occurring within the last two or three years, as is the nature of any discussion concerning the evolution of information

communication technologies, these events seem already consigned to dim, and increasingly distant, memory. The first "Internet event" cited in the second chapter surrounded the *Pathfinder* mission to Mars. Although technologically significant, this was a "passive" event - participants could (merely?) view images beamed from the Martian landscape: they could not control the camera or influence the content of the images supplied. The second Internet event surrounded the death of Diana, the Princess of Wales. If individuals could not participate in this historical event by witnessing the funeral cortege in person (as many thousands chose to do so) they could instead use their computers to send a message of condolence to a hastily created web site. People thus became proactive in the events following the Princess' death. Whilst the practical outcome of this activity was perhaps limited to persuading a reluctant mother-in-law to address her (apparently disaffected) subjects in an unprecedented television broadcast and to join the mourning masses outside the gates of Buckingham Palace, the third Internet event, that which occurred during the trial and conviction of Louise Woodward, appeared to provide tangible evidence of some of the genuine ways in which individuals can be empowered through the use of information communication technologies.

The plethora of web sites that appeared during the trial of the English au pair demonstrated that users of telematics technologies felt that they could influence those responsible for her conviction. Reacting hourly to the broadcasts from the Massachusetts court room, the authors of various dedicated web sites provided links to those who they felt might be able to influence the outcome of the trial - it was possible to use e-mail to lobby the American President and the British Prime Minister. The subsequent decision by Judge Zobel to publish his deliberations on the Internet seemed to validate the efforts of those who had attempted to use the same technologies in order to "seek justice."[2] Whereas with traditional media it is notoriously difficult to

2 Ironically, the deliberations of Judge Zobel could not be accessed via the Internet due to a systems failure brought about the huge amount of interest generated in the case.

both gauge and make manifest "public opinion," (a difficulty highlighted by the procrastination of the monarch during those late summer days) telematics technologies allow users to voice their opinions and thoughts about specific events directly. Fernback remarks that

> ... the public arena of cyberspace allows us to break our public silence. For many users, it is a space of vitality and belonging where there is less to fear as public figures and where recriminations seem gentler when the lack of physical presence creates a safety net. In cyberspace, we tend to be bolder, riskier, sometimes more rude, sometimes more kind, but the silence is broken nevertheless.
>
> (Fernback 1997: 37)

The long term consequences of the events cited could be far reaching. Citizens could be empowered, by the use of digital technologies, to participate in a variety of public events, including those involving judicial processes. Courtroom proceedings might be televised and the public invited to pass judgement on the accused simply by using ICTs' to register their verdict. Libraries, by providing the technologies that would enable such activities, would invariably be implicated in the processes themselves. The apparent independence of the institution of the public library - so jealously guarded and yet equally vulnerable in an age of alternative sources of information - might thus be compromised by the very technology which some hope will be its saviour.

The Research

This research has been funded and supported by the University of Wolverhampton. In the spring of 1995 staff within the Photography

Department in the University's School of Art and Design approached the Birmingham Library Service with a proposal to establish a joint research project examining aspects of the extensive photographic archives held within the Birmingham Central Library. After a period of negotiation a research post was advertised the following autumn. The research commenced on the 1st January 1996.

During the initial discussions the representatives of the Birmingham Library Service and the University did not define the focus of the research. Although the work would consider an aspect of the photographic archive within the Birmingham Central Library no constraints had been placed on the main topic of the investigation. The proposal by the author to examine the impact of digital technologies on the work of the archive was supported by the representatives of the Library. Unknown to the author at the time, staff at the Birmingham Central Library had undertaken preliminary work in this area and were receptive to the idea of participating in further research. Moreover, the deployment of information communication technologies (ICTs') by the library fraternity continues to increase. Significantly, albeit coincidentally, the author's proposal to examine the impact of ICTs' on the photographic archive was welcomed (and ultimately sanctioned) by the Head of the Birmingham Central Library, John Dolan. Dolan was to be instrumental in the compilation of the report *New Library: The People's Network*, published by the Library and Information Commission in 1997. Described by Chris Smith, Secretary of State for Culture, Media and Sport as "a defining moment in the history of the public library service," the report advocated the widespread adoption of ICT's to facilitate aspects of the services work. (*The Times* October 16, 1997).

In addition to the encouragement given by the Birmingham Library Service, the proposal to consider the impact of ICT's on photographic archives was supported by staff within the University of Wolverhampton. Although at

the onset of the project it was not clear how the research could provide opportunities for collaboration between departments within the University, it was felt that such partnerships could no doubt emerge. Indeed, following the author's decision to undertake empirical research, strong and productive links were made with students and staff from the Graphic Design Department within the University's School of Art and Design. Aware of the benefits associated with sharing skills and knowledge within the institution, particularly where higher research was informing the activities of undergraduate students, the author made a number of mutually productive links within the University.

The research has considered the impact of digital technologies on two discrete groups: those working *for* the library service and those *using* the library service. Feldman describes these groups as "content owners" and "content users" respectively (Feldman 1997: 152). Feldman indicates that this definition is complicated by the fact that "...in the middle are commercial companies trying to sell products to both in this chain" (Ibid). The research has examined the effectiveness of a number of digital products and the appropriateness of their adoption by the Birmingham Library Service. Trying to make sense of such products (and the possible benefits associated with them) has required library professionals to acquire new skills and enhanced knowledge. A fundamental issue confronting those working within the Birmingham Library Service (as well as their peers beyond) has been that relating to the potential benefits of undertaking a digitisation programme. Indeed, there would be little to gain (and much to lose) in turning photographic images into electronic images (and sounds and words) *unless* the process added value to the experience of using the images underlying content. Electronic representations of images should not merely be the *same* images in electronic form. To be effective, the digitisation process must ensure that photographic images are transformed into a *new* medium, with substantial and

unique added values, addressing the identified needs of those using them.

The research has adopted a number of strategies in order to examine the implications of content "owners" using digital technologies to address the needs of content "users." **Chapter One** offers a background to this work by examining the history and role of the public library service in the United Kingdom. This material provides a context to the work undertaken by the staff at the Birmingham Central Library by examining the multiple, often conflicting functions of the library service. The evolution of the public library service is examined, as are its present day responsibilities and the problems associated with executing these. These problems are themselves sometimes exacerbated by the disparate nature of the service. A lack of homogeneity between local authorities, for example, has compounded the difficulties of implementing a nation-wide strategy for IT integration between libraries and skills sharing amongst library staff. As a consequence problems relating to the use of information technologies by the public services remain unresolved despite many years of consideration. Johnson recalls that it was as far back as the late 1960's when the American administration initiated the *Wired Cities* programme, which as part of the so-called "Great Society" project, represented "a multifaceted attempt to address urban social problems during a time of unprecedented urban unrest and violent uprising" (Johnson 1996: 82). The programme advocated a national communications infrastructure for the US, combining cable television, telephones and institutional and community owned networks. It would appear that after many years of apparent inertia, it is only now that some within the library profession in the UK are seeking responsibility for the creation of comparable systems.

In recent years the library profession has come under increasing pressure to provide services to many new groups, not least those associated with the expansion of higher education and the present Government's desire

to instigate policies related to so-called "Life Long Learning." These demands have occurred at a time of continued fiscal restraint, forcing local authorities to examine closely both the provisions made and the sources of funding available. Many authorities have engaged in partnerships with commercial service providers. The BLS, for example, along with a number of other library authorities, has worked collaboratively with the commercial service provider, Input - Output, in order to facilitate access to a range of on-line and off-line services. It is perhaps not surprising then, that as Greenhalgh and Worpole recall, despite the successes of the library service and the importance placed on it by both local and central government, the library profession have been adversely influenced by the continued redefinition of their status.

> (Public libraries) ... continue to exhibit signs of considerable success: success in maintaining a wide cross-section of the population as regular users; success in continuing to keep abreast of new media forms - records, tapes, CDs, videos, open learning materials; success in steering a fine line between populist consumerism and elitist cultural exclusivity; success in maintaining a distinctive social and public space, and success too in maintaining particular and distinctive standards of public architecture when and where there were opportunities for new buildings. But, paradoxically, librarians (see) things otherwise. They perceive continuing - and in some cases even terminal - crisis.
>
> (Greenhalgh and Worpole 1995: 3)

Those responsible for managing the extensive photographic collections held within the Birmingham Central Library archive experience a number of difficulties. Problems often occur as a result of the position of the archive *within* the Library. Whilst libraries are primarily concerned with *access*, archives are essentially concerned with *preservation*. How these two responsibilities conflict is explored in the first chapter. Although there is much in common in the technological needs of librarians and archivists, each activity nevertheless requires unique solutions to discrete problems. **Chapter**

Two goes on to discuss those technologies which have the potential to be utilised by photographic archivists, curators and librarians in order to facilitate aspects of their day to day work. The chapter provides an account of the development and history of those systems which allow photographic images to be acquired, disseminated and conserved digitally. Drawing on recent examples of digitised "photographic" images, (including those received from the *Pathfinder Mission* and those disseminated electronically during the funeral of Princess Diana), the material considers a range of issues relating to the use of digital technologies. The speed and resolution at which digitised images can be transferred may have a significant impact on the way those responsible for photographic collections exploit and market their resources. Copyright issues are discussed in this chapter, as are those "counter technologies" - watermarking and encryption techniques - which have been developed in the order to provide protection from the illicit use of digital images.

The digitisation of photographic material is having a significant effect on the economies of all sectors of the photographic industry. The possibilities for exploiting the fiscal potential of photographic archives through the use of digital technologies are also examined in the second chapter. The purpose here is to consider how those responsible for photographic archives may be influenced by those developing and marketing emerging technologies. The segmentation of (photographic) markets is considered, encompassing the activities of those companies which have already exerted considerable influence over those responsible for the custody of important publicly owned photographic collections.

Having discussed the history and role of the UK public library system in the opening chapter, a close examination of the photographic collections held by the Birmingham Library Service is provided in **Chapter Three**. The importance of these collections is illustrated by providing details about the

works and their historical significance. The history of the collections within the Birmingham Central Library is recalled in order to demonstrate the close relationship between the archive and the city in which it is placed. The chapter continues by providing details of the strategies adopted and the resources employed in order to undertake the research. In this sense this chapter acts as a fulcrum for the whole text. **Chapter One** describes the broader context in which the work with digital technologies is occurring. **Chapter Two** describes those technologies which are impacting on the way photographic archivists carry out their work. By describing the collections at the Birmingham Central Library **Chapter Three** provides the context for the theoretical and empirical research outlined in the succeeding chapters. The third chapter concludes by considering the rationale for both of these components of the research. The various partnerships that evolved with outside agencies in order to facilitate the empirical projects are described, as are those more general strategies which were brought to bear on the research in order to realise its completion.

Issues relating to the practical adoption of information communication technologies by those responsible for the photographic archive within the Birmingham Central Library are examined in **Chapter Four**. The case studies described strengthen the research by providing valuable empirical evidence. Four projects instigated by the author are discussed in this chapter: a web site produced in collaboration with the Computer Sciences Department at Birmingham University; an interface created with staff and students from the University of Wolverhampton; a website and interactive kiosk produced for *Coming to Light* - an exhibition held at the Birmingham Museum and Art Gallery in the autumn of 1998 - and *Images of Transition,* a project which set out to examine the viability of using telematics to allow communities to consider the content of photographic materials of mutual interest.

Although for reasons described elsewhere the I*mages of Transition*

initiative failed to proceed beyond the initial planning stage, this project, along with the preliminary website and interface, did ultimately contribute to the realisation of the *Coming to Light* multimedia programme. As such the *Coming to Light* project was the most substantive of the empirical projects undertaken, whilst the research gathered as a result of its realisation (particularly that relating to it's use by members of the public) was the most valuable. It is for this reason that a copy of the programme has been included with this volume.

Representing the substantive part of the thesis, **Chapter Five** draws together the theoretical and empirical elements of the research in order to explore the impact the adoption of digital technologies will have on the Birmingham Central Library and the users of its photographic archive. A range of questions are asked. How might the users of the archive benefit by the use of digital technologies? What impact will the adoption of these technologies have on staff within the Library? What would be the practical implications of embarking on a digitisation programme? How might the rights of the Library be protected whilst the financial benefits associated with the use of ICT's are exploited? How might digitisation enhance (or indeed denigrate) the Library's position as an important repository of historical photographic material? By citing the thoughts and observations of those responsible for the management and use of the photographic collections within the Birmingham Central Library the chapter examines the dilemmas and problems they face when considering the potential of the digitised image. (As elsewhere in this text, the reflections of those questioned during the semi-structured interviews undertaken as part of the research appear in parenthesis.) The chapter questions many assertions made about digitisation in an attempt to redress the balance in a debate typified by oversimplification and verbose assertions. Despite Mitchell's enthusiasm, the logistics (and expense) of the digitisation process are much more extensive than his analysis would suggest.

> Photography and digital imaging diverge strikingly, for the stored array of integers has none of the fragility and recalcitrance of the photograph's emulsion-coated surface; the essential characteristic of digital information is that it can be manipulated easily and very rapidly by computer. It is simply a matter of substituting new digits for old.
>
> (Mitchell 1994: 7)

The conclusions made as as result of undertaking the research are summarised in the closing section of the thesis, **Chapter Six**. Whilst this chapter clarifies the dilemmas and issues facing those responsible for photographic archives as a result of advancements in digital technologies, it also examines possible future developments, both within the Birmingham Central Library and beyond. This section provides suggestions as to how the research might continue, considering projects that could evolve as a result of the work carried out to date, along with a set of recommendations. This chapter, as with those preceding it, directs the reader to the information contained in the appendix. Providing supplementary material, including details of reports and data gathered through the research process, this section is intended to enhance and strengthen the thesis by providing valuable, additional information.

Literature Review

The review of current literature undertaken in order to understand and identify issues concerning the use of digital technologies in libraries has both dictated and confirmed the distinctive nature of this research. This text provides observations and conclusions about the use of information communication technologies within a public library archive holding

photographic materials of unique historical importance. Others continue to analyse the use of digital technologies in libraries and archives, along with the many technological and ethical considerations relating to the digitisation of photographic materials. Whilst as expected the literature appears in a variety of formats including books, journals, newspaper articles and conference papers, significantly much of the current material contributing to the debate has been disseminated via the Internet. Report literature placed on web sites of national research and academic bodies, primarily within Europe and the USA, reveals that discussion is taking place amongst a variety of sectors and that it holds international interest. The literature review undertaken has also indicated that there are a number of common themes relating to the published material. Many project reports in particular have described activities in this field and the institutional problems that have had to be overcome (Hopkins 1996; Kirby 1997). Digitisation as a means of increasing access to resources has been examined (Barry 1996; Bryant 1997; Foulds and Hart 1998) often complementing that field of research considering the digitisation of artefacts for the long term preservation of library material (Feather et al 1996; Kirtley 1997; Frey 1999). Other research has examined the implications of digitising both photographic and non photographic material, considering such issues as copyright and the indexing of images. Rather than taking a holistic approach this research is unique in that it draws together a wide range of such material, critically examining the use of digital technologies for the specific purpose of providing access to and preserving photographic materials *held within an archive controlled by a public library authority.*

As discussed, the literature review has revealed that the growth in the use of ICT's has been reflected in the publication of a number of policy statements and texts considering the role of the public library service in the light of such developments (Comedia 1993; Greenhalgh and Worpole 1995; Ormes and Dempsey 1997; New Library 1997). In recent years publications

considering the broader sociological implications of using emerging information communication technologies have also become available. Many have been general and wide ranging in their analysis (Sardar 1996; Dovey 1996; Jones 1997; Jordon 1999). Others have examined narrower topics, for example, the use of computers by women (Grundy 1996), the impact of digital technologies on photographic practice (Mitchell 1994; Lister 1995) and the characteristics and development of information communication technologies (Feldman 1997; Levinson 1998; Quittner and Slatalla 1998). However, although the use of digital technologies continues to preoccupy many within the library and photographic fraternities there are no texts examining the utilisation of information communication technologies by those custodians of important photographic archives under the auspices of the public library service. To date the introduction of digital technologies within libraries and photographic archives has only been considered in general terms (Cawkell 1992; Kenny and Chapman 1996; Alexander and Prescott 1998). The author's research is unique because it considers the use of such technology to support the role of a public library service and the archive within it. Here the research has benefited from the literature considering the evolution and remit of the public library service in the United Kingdom (Kelly 1973; Bradsher 1988; Cox 1992; Chartier 1994). Moreover, whilst others have published their findings into the utilisation of digital technologies for the purpose of preserving and disseminating photographic materials (Enser 1996; Ostrow 1998; Ashley-Smith 1999, Del Bimbo 1999), non have considered the use of ICT's to facilitate the many tasks undertaken by those in the public library sector when working with photographic collections of national and international importance. This is the main theme addressed by the research.

Whilst this document is intended to be of relevance to a range of critics, scholars and policy makers, it is important to acknowledge where it resides within the wider field of debate. Concerned with specific notions pertaining to

the control and access to digitised photographic images held within public libraries and archives, the research does of course relate to broader topics that are currently exercising social, cultural and media theorists. Contemporary developments in computer technologies are resulting in a myriad number of unresolved problems, not least those associated with the social, cultural and political implications resulting from the historical shift from mechanical to digital reproduction. For example theorists and critics are currently involved in relating to struggles over access and equality issues in "computerised", globalising cultures (Thomas 1995; Tomlinson 1999; Feenberg 1999; Lippert 2000); the perceived challenges of computerisation and information communication technologies to classification practices, the ordering of knowledge and ultimately to epistemology (Foucault 1977; Brown 1997; McChesney 2000); the implications of moves towards the dematerialisation and "virtualisation" of artefacts and institutions (Welsh 1990; Robins and Webster 1999); theories about the rise of an information economy (Castells 1999; Louw 2001; Street 2001) and issues pertaining to the "public sphere" and networks (Burnett 1995; Golding 1998).

Within the context of such far reaching and complex issues, this research has its own distinctive voice which embraces a range of theories perhaps best described as being broadly associated with Cultural and Media Studies and the Sociology of Culture. As such the contents touch upon a range of theories, adopting a pluralistic approach. For example, it cites Williams (notable for his exposition of popular culture), Grundy (Feminism), Barthes (semiology), Sardar (whose Marxist views relate to hegemony and access to emerging digital resources) along with theories relating to the Frankfurt School. Furthermore the research considers those phenomena associated with telematics which relate to Post Modernist theories concerning the loss of linear "metanarratives": the dominance of mass media, it is argued, has led to the breakdown of distinctions in time and geographical spaces. By tackling a

range of issues in a discursive (and at times recursive) style, the text brings together a range of disciplines, each with their own traditions, theoretical assumptions, methodologies and empirical and historical concerns. As such no attempt has been made to integrate them into any overarching, interdisciplinary perspective.

This document has been written during a time which has seen information communication technologies becoming fully integrated into modern mass media. The increasing extent to which people's lives in western capitalist societies appear to be affected by the popular culture presented by the modern mass media is clearly important. It is important in other societies as well, both historical and contemporary, but in these societies the sheer volume of popular media culture which is made available gives it specific significance which warrants investigation. Nevertheless, despite such trends in western capitalist societies there are of course domestic, economic and cultural inequalities which prevent people from sharing in the increased availability of popular media culture (Sreberny-Mohammadi 1991; Drummond and Paterson 1986). As this research goes on to consider, with a remit to provide access to *all*, those responsible for the institution of the public library have a duty to attempt to offset some of these inequalities.

Although this research takes a pluralistic approach in assessing some of the social, cultural and political implications of the digitised photographic image, the appropriation of such technologies by public libraries could represent a post modernist phenomena. If one accepts those postmodernists notions that suggest that during the twentieth century the economic needs of of capitalism have shifted from production to consumption (Strinati 1996: 235), the changing ethos of the public library, with its acceptance of "private consumer" initiatives, would appear to validate such theories. (In Birmingham the partnership with the Input-Output company and the "shop"

in the foyer of the Central Library gives credence to such claims.) By examining how digital technologies can be used to exploit the fiscal potential of their photographic assets, policy makers within the public library system are participating in a process that is embracing notions surrounding the commodification of cultural artefacts. It is clear that in an advanced capitalist society like Britain, the need for people to consume has become as important, if not strategically more important, than the need for people to produce. Increased affluence and leisure time, and the ability of significant sections of the working class to engage in certain types of conspicuous consumption, have in turn served to accentuate this process. Thus in Birmingham, in a small, but tangible way, the appropriation of digital resources which may provide access to photographic content *at a price,* is making a contribution to the emergence of a post-modern popular culture which some critics believe celebrates consumerism, hedonism and style.

In addition to providing access to content, by investigating and implementing the use of information communication technologies, custodians within public libraries are also contributing to the emerging digital media infrastructure. This is important because the rise of modern forms of mass communications, and the associated proliferation of popular media culture, has become central to the explanatory framework of post-modern theory. The world, it is argued, will increasingly consist of media screens and popular cultural images - TVs, VDUs, videos, computers, computer games, personal stereos, adverts, theme parks, shopping malls, "fictitious capital" or credit - which are part and parcel of the trends towards post-modern popular culture. Through the provision of both content and electronic resources it seems possible that the public library of the twenty first century will become an integral component of such mass media.

The empirical research cited in **Chapter Three** recalls how photography

and digital technologies have been used by the Birmingham Library Service in order to consider issues associated with diaspora. This is again central to many postmodernist theories. In the past twenty years the interpretation of identity, be it personal or collective, has become a crucial issue in debates raised by post-modern theory (See Lash and Urry 1987 and Gitlin 1989). It is argued that we have witnessed the gradual disappearance of traditional and highly valued frames of reference in terms of which people could define themselves and their place in society, and so feel relatively secure in their personal and collective identities. Transnational economic processes erode the significance of local and national industries and, thereby, the occupational, communal and familial identities they could once sustain. Part of the purpose of the empirical work undertaken with the History Van was to examine some of these issues through the practical application of digital resources. It is clear that recent developments in technology and communications have had significant effects on the speed with which information and images can be transported around the world. Such developments are in line with postmodernist claims about space and time. Nevertheless, as the *Images of Transition* project subsequently illustrated, the opportunities to experience these changes are unequally distributed. They are clearly more available to some classes and occupational groups than others - inequalities which the institution of the public library is required to address.

It could be argued, therefore, that as a result of the commodification of photographic artefacts that may be brought about by the adoption of digital resources, along with the provision of an information infrastructure that contributes to evolving forms of mass media, public libraries are at once participating in the creation of a post-modern society, whilst at the same time time attempting to offset some of its economic and culturally divisive manifestations. As this text goes on to demonstrate such contradictions are indicative of the many tensions and dilemmas' that characterise the UK public

library service at the current time and it is within this broader context that the research at Birmingham took place.

Although the shape and logic of the research has been described, as Rothenberg's Shakespearian pastiche lucidly implies, its intention (and indeed validity) could be undermined by the very nature of the technologies scrutinised. Continually evolving as they are, the risk that the research has already become outdated has to be acknowledged. In response to this justifiable assertion the author would defend the credibility of the research by suggesting that it aims to deliver a broad range of material, including insights and ideas that will remain relevant longer than the technological changes that continue to occur on a weekly, if not daily, basis.

Summation

In summary this **Introduction** has outlined the following points:

- Digital technologies can (albeit inadvertently) lead to the reinterpretation of historical and contemporary photographic ephemera
- A number of policy statements published in recent years have considered the use of ICTs' within public libraries and associated institutions.
- Computer technologies are unreliable.
- Tensions exist in the "local" and "global" remit of public libraries.
- Whilst traditionally perceived as "independent" institutions, ICTs' are tending to encourage public libraries to take on a "mediation" role.
- The author's research has considered the actual and potential role of technology on "Content Owners" and "Content Users" within the context of the UK public library system.

- The literature review undertaken by the author has considered a number of related topics, including institutional tensions and difficulties, preservation and copyright.

The substantive implications of these points I believe are as follows:

- Although technologies are continually evolving, broad trends can nevertheless be discussed and critically evaluated.
- In order to ensure that photographic materials are not "devalued" by the use of ICTs', librarians and archivists must be cautious where such technologies are utilised.
- The comparatively recent consideration of ICTs' within public libraries and archives indicates that clear policies and guidelines about their use have yet to emerge. This research aims to make an effective contribution to such debates.
- Due to the unreliable nature of ICTs' all appropriate safeguards should be taken in order to protect original materials.
- Policies must be devised concerning the "local" and "global" role of public libraries.
- Policies must be formulated relating to the role of public libraries as "mediators".
- Library professionals must formulate effective strategies in order that ICTs' are used appropriately by both "Content Owners" and "Content Users".
- The research that follows is unique in that it considers a photographic archive of *national* importance residing within a *local authority* controlled public library.

CHAPTER ONE

LIBRARIES AND ARCHIVES

1.1 Introduction

This chapter serves a number of purposes. The opening section considers the creation of the public library service in the United Kingdom in order to provide a historical context to the work currently undertaken with the photographic archive at the Birmingham Central Library. Recognising that the modern library service exists largely as a legacy of both the mediaeval ecclesiastical libraries and the rise of literacy in the fifteenth century, the first section of the chapter considers the evolution of the library system both prior to and after the Public Libraries Act of 1850. The chapter goes on to consider both the role of the public library in contemporary society and the purpose and function of the archive. Whilst the typical public library exists as a complex institution, fulfilling a number of diverse, sometimes conflicting roles, Sekula suggests that the

> ... model (of the archive) exerts a basic influence on the character of the truths and pleasures experienced in looking at photographs, especially today, when photographic books and exhibitions are being assembled from archives at an unprecedented rate.
>
> (Sekula 1986: 153)

Against this context the chapter concludes with an overview of the Birmingham Library Service, which, as the largest of its kind in Europe,[1] houses a substantial and important photographic archive.

The creation of a public library service in the United Kingdom has been

1 In the introduction to the Birmingham City Council Department of Leisure and Community Services *Guide to Services*, Brian Epps, Director of Leisure and Community Services, states "Birmingham's Leisure and Community Services Department is the largest in Europe, attracting over 30 million user visits annually ... that means that for every second, 24 hours a day, all year someone is accessing one of our services."

both slow and difficult. Thompson argues that

> ... libraries are powerful instruments of social and political change. They are distrusted and, very frequently in history, have been suppressed by dictators, despots and autocrats of every kind.
>
> (Thompson 1974: 10)

Thompson goes onto to suggest that

> ... (the) establishment of the public library system in Britain in the last century was resisted by a number of the nation's rulers on the grounds that they feared that access to libraries and books would give working people ideas above their station and that libraries would become centres of unrest and hot-beds of sedition. Those who held this view, have, of course, been proven right.
>
> (Thompson 1974: 11)

The historical precedents that have dictated the evolution of the modern public library service - including the resistance of those wary of its influence - have had an impact on the duties it currently undertakes. In recent years these functions have been undertaken in the context of continued advancements in the capabilities of information communication technologies: the library profession is being required to address a range of issues relating to these technological developments. With its history of participation in experimental and innovative technology, the Birmingham Library Service would seem to be able to respond to the seemingly infinite number of challenges posed by the adoption of ICT's.

During the 1970's, the Birmingham Library Service, along with those of Norwich, Bexley, Hounslow, Sutton and Waltham Forrest, participated in the development of Prestel. Launched by the Post Office in 1978, the British

Library financed a research study (carried out by the Library Association and Aslib) in order to assess the impact of the computerised visual information system on public library references services and to investigate Prestel's potential as a vehicle for conveying community information. (Hartley 1990: 305). Whilst Hare suggests that (expensive) new technologies should be introduced in synchronicity with the core activities of libraries, with their experience of systems such as Prestel, the management and staff within the Birmingham Library Service would appear to be well placed to respond to the many challenges that they continue to pose.

> The problem for the public library will be how to maintain services in several formats to meet the needs of information rich and poor alike and how to sustain the high levels of investment to maintain the currency of its technology.
>
> (Hare 1997: 11)

Whilst the following section provides an overview of the development and current role of the public library service in the United Kingdom, specific questions relating to *how* the Birmingham Library Service might appropriately respond to the problems associated with the adoption of information communication technologies (in order to facilitate aspects of the work undertaken with its photographic archive) are considered in subsequent chapters.

1.2 An Overview of the History of the British Public Library Service

Although within the last 150 years the modern library service has been directly influenced and shaped by the 1850 Public Libraries Act, this legislation merely represented the first official regulation of libraries after many centuries

of the public provision of books and manuscripts. The 1850 Act permitted the councils' of towns' with a population of over 10,000 to provide a building and a librarian in order to offer a rudimentary public library service. (Weigand and Davis 1994: 631). At this stage no consideration was given to the purchase of books from the levied rate of half a penny in the pound. The legislation, did, however, enshrine the principle of a public library provision supported by public funds. Prior to the Act the majority of libraries in the United Kingdom were either endowed or subscription libraries, whilst it was also possible to gain access to written materials in other reading centres, notably Book Clubs and in coffee houses.[2]

Whilst Thompson has suggested that prior to the 1850 Act the development of the British public library system was thwarted by an Establishment threatened by the existence of "hot beds of sedition," writing in 1894 Greenwood argued that historically libraries have infact been *valued* by those in authority.

> The kings of old were wise in their day and generation. They were not slow to recognise that it was politic to turn the popular mind from merely political theories to books. The pleasures of imagination which all might enjoy through the channel of a library were a famous antidote for political disaffection, and it was probably, therefore, not altogether a love of literature that made the Roman Emperors reckon manuscripts amongst the most valued of their spoils of war, or to estimate them even more highly than

2 Kelly describes the various ways in which libraries were funded: "In the absence of assistance from public funds, there are three ways in which a library may be provided. One is by gift or endowment; another is by subscription; and the third is by attaching a library to an institution which exists also for other purposes. In an endowed library the cost is borne by the donor or donors; in a subscription library it is borne by the users; in an institutional library the cost may or may not be borne by the users, according to the nature of the institution. There are of course, various ways in which these methods may be combined,e.g. a library may be created by endowment and subsequently maintained by subscription, or by an institution." KELLY, T.(1969) *Early Public Libraries: A History in Great Britain before 1850.* London: The Library Association. See also KAUFMAN, P. (1969) *Libraries and their Users: Collected Papers in Library History.* London: The Library Association.

vessels full of gold.

(Greenwood 1894: 5)

Irrespective of whether or not libraries fuel or suppress the minds of a disaffected populace, Irwin suggests that throughout history libraries have been created wherever groups have established communities and shared common interests.

> The relation between urban life and civilisation was, of course, noticed long ago ... The connection between urban life and libraries is equally apparent. The specialisation of function arising from the assembly of men in large communities, involves inevitably not merely intercommunication between them, but the recording of communication in more or less permanent form.

(Irwin 1958a: 16)

Baitt reiterates this point, suggesting that "... wherever people have formed themselves into communities there is a need for a resource that contains information about that community" (Baitt 1997: 206). Others believe that the library has been a fundamental instrument in the evolution of civilisation.

> No study of the history of libraries can neglect the part they have played as instruments of authority over an unlettered or partly educated people. From the earliest times, civilisation has been founded in some form on religious symbolism (whether it be a holy place, or grove, or a stone circle or a mound) which serves to hold the tribe together. If, as has been maintained, the art of communication is a vital step in our history, the art of recording communication is doubly important; for only by written records can man communicate with man over distances of time and space. Libraries, which are indeed repositories of recorded communication, are thus seen in a true sense as one of the

foundation stones of human society.

(Irwin 1958b: 4)

Prior to the fifteenth century the majority of libraries were associated with the Church (Clark 1894). In Britain, however, such libraries were very rare: one collection is known to have existed in the thirteenth century - a library of 48 volumes owned by Geoffrey de Cawath, the Rector of St Magnus, London (Kelly 1969: 68). During mediaeval times, however, a number of bishops did begin to acquire small private libraries whilst living nomadic lives, moving from manor to manor.

Although diocesan visitations did little to encourage either the establishment of libraries or the growth of literacy in the thirteenth and fourteenth centuries (Irwin 1958b: 5), the number of libraries in Britain did begin to increase after the fifteenth century. This development came about partly as a result of the rise in literacy that occurred at this time. After Caxton had printed his first text in English in 1474, paper, (mainly imported from France), became a convenient and cheap substitute for parchment; posts and handbills soon became a common method of public information (Westfall Thompson 1967: 630). Evidence of the increase in literacy in the fifteenth century is also apparent in the architecture of the period. During this time many manor houses were altered so as to provide private apartments for the benefit of the lord and lady. Irwin suggests that without such as alterations it is unlikely that much private reading would have been possible (Irwin 1958a: 155). In parish churches pews with book rests were also becoming common for the first time, whilst clerestory windows - those above the level of the aisle roofs - began to be constructed in larger churches and cathedrals in order to provide additional light in the nave (Horward 1936: 58). Further evidence of an increasingly literate public can also be demonstrated by the activities of

publishers such as John Shirley (1366 - 1456), who began to use scribes to copy manuscripts. Such documents were sometimes subsequently lent or sold to customers, a trend which anticipated the later combination of bookseller and circulating library (Irwin 1958a: 155).

At least three public libraries are known to have existed in the fifteenth century. In 1422 Richard ("Dick") Whittington established the Guildhall Library for the free use of the citizens of London, whilst John Carpenter, the Bishop of Worcester (1444 to 1476) provided two public libraries at his own expense. A wealthy and industrious prelate, Carpenter established a chained reference library at Worcester Cathedral prior to founding a similar library in Bristol in 1464 (Savage 1970: 115). The fact that these libraries were chained reflects the value afforded to books at this time.

> In the Middle Ages books were rare and so was honesty. A book, it was said, was worth as much as a farm: unlike a farm, it was portable property that could easily be purloined. Valuables in all ages require protection. Books, therefore, were kept under lock and key. This was done in two ways: they were either shut up in a cupboard or a chest, or they were chained, sometimes four or five together, to a desk, often in the choir.
>
> (Hillman Streeter 1970: 23)

In addition to the small number of public libraries operating at this time, some of the earliest domestic libraries can also be dated to this period: Chaucer's library in the gatehouse at Aldgate and Sir Thomas More's library in Chelsea are two notable examples (Savage 1970: 85).

As a result of the rise in literacy that occurred in the fifteenth and sixteenth centuries, efforts to establish so called "popular" libraries began to be

made in the seventeenth century.[3] The first library to have its stock freely available to the general public is believed to have been founded in Coventry in 1601. Libraries were also established in Norwich in 1608, Bristol (1615), Langley Marish, near Slough (1623) , Leicester (1632) and at Innerpeffray, near Crieff in 1680. (Irwin 1964: 23). Whilst a small number of libraries were established in the eighteenth century - notably those founded by Sir Thomas Bray between 1704 and 1730 - it was not until the nineteenth century that the public library movement developed its own momentum.

As with the assistance given by Carpenter of Worcester four hundred years earlier, the creation of libraries in the first half of the nineteenth century was often linked to promoting the interests of religion. Many popular libraries were established in the south-eastern counties of Scotland and the north-east of England in particular at this time. One of the most famous of these schemes was Provost Samual Brown's system of "itinerating libraries," inaugurated in East Lothian in 1817. Brown's aspiration was to eventually establish a library within one and a half miles of every inhabitant of the country in order to "... station a division of fifty volumes in every village and hamlet where a librarian could be found" (Murison 1988: 12). Fifty such libraries were subsequently opened. The promotion of religion in the early part of the eighteenth century also led to the establishment of the Sunday School Union. Founded in 1803 in order to encourage the "..provision of books for working class people" the Sunday School Union shared many of the aims of the Mechanics Institutes Libraries founded two decades later (Harrison and Beenham 1985: 16). The first Mechanics Institute Library opened in Glasgow in 1823, with those in London and Aberdeen opening a year later (Munford 1965: 132).

Whilst the development of the library movement in the early

3 The term "popular" has been widely used to distinguish those public libraries established before those provided and maintained by rates under the Public Libraries Acts. See MURISON, W. (1988) *The Public Library: Its Origin, Purpose and Significance*. London: George Harper and Co Ltd. p.39.

nineteenth century was in many respects contingent on the energies of those promoting the interests of religion, this period also represented a time of considerable improvements in the welfare and lives of the working classes. In addition to the 1845 Museums Act , the Public Libraries Act of 1850 followed the Municipal Corporations Act of 1835, the Ten Hours Act of 1847 and the Public Health Act of 1848. Kelly suggests that these Acts were passed primarily because of the liberal attitudes of a minority of privileged individuals.

> The Public Libraries Act of 1850 was one of the whole series of reforming measures passed at a time when the country was just emerging from the worst horrors of the Industrial Revolution. In spite of the Chartists movement and the early efforts at trade union co-operative organisation, these measures were due more to the enlightened goodwill of a sector of the ruling classes than to revolutionary agitation from below.
>
> (Kelly 1973: 3)

Kelly also argues that the 1850 Act was required because the Establishment felt threatened by the ability of a volatile population to bring about civil disruption. By removing the old borough corporations and placing the management of municipal affairs in the hands of elected town councils, the Municipal Corporation Act limited the power of these councils to spend money from the rates to specific expenditure - significantly the maintenance of law and order. By the 1850's, Kelly suggests, the Public Libraries Act was required to alleviate some of the excesses of oppressive government (Kelly 1973: 4).

The 1850 Public Libraries Act undoubtedly represented a turning point in the development of the public library system. The idea that a library might be supported from public funds was, however, not entirely without

precedent. In addition to the British Museum Library, which from its inauguration in 1753 was maintained with national funds, a number of old endowed libraries had received funding from municipal resources from around the fifteenth century onwards - the town library of Kirkwall in Orkney had received contributions from the rates of a parish ten miles away, for example (Kelly 1974: 5).

Despite the progress made possible by the legislation of 1850, insufficient funding thwarted the development of public libraries in the years immediately following the Act. The limited progress in the development of the public library movement at this time was largely attributable to the philanthropic support given by a few wealthy individuals. The financial assistance proffered by both Passmore Edwards and Andrew Carnegie, for example, helped strengthen the library movement by supporting the activities of the Library Association and the National Central Library. Because of insufficient funding, significant progress in the development of the public library system only began to be made in the years immediately following the First World War. The 1919 Public Libraries Act both reversed the rate limitation previously imposed on local councils and permitted the establishment of County Libraries in England and Wales. Libraries enjoyed further advantages following an amendment of the Net Book Agreement (NBA) in 1929.[4] In 1945 the library movement was further strengthened when the United Nations Educational, Scientific and Cultural Organisation (UNESCO) began its work in the library field (Knight and Shepley Nourse 1969: 483). Twenty years on, the passing of the Public Libraries and Museum Act in 1964 had a significant effect on the library service, following the publication of the *Roberts Report* in 1959.

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4 Under the terms of the Net Book Agreement, 1957, the Publishers Association issued library licences which entitled holders to a discount of 10% or less on the net published prices of books. Certain conditions applied, notably that books were bought solely for library use and not for resale. See RITCHIE, S. (1982) *Modern Library Practice*. Buckden: ELM Publications. p.223.

Highlighting the importance of the public library, the *Roberts Report* reflected the positive associations often attributed to it. The report recognised the library ...

> as an engine of great potentialities for national welfare and as an essential foundation for the progression in education and culture without which no people can hold its own in the struggle for existence.
>
> (Roberts Report 1959)

The report exists as one of a number of policy statements that have considered the role and function of the public library service in recent years. Latterly both the library profession and government have used such statements to link the library movement with the promotion of the information society. Indeed, this is the premise of both the EU libraries programme *Public Libraries and the Information Society Study* (PLIS)[5] and the Department of Heritage's 1997 policy statement *Reading the Future.* (DNH 1997).[6] In addition to the many difficulties associated with the continued adoption of information communication technologies highlighted by these reports, the library profession is today working in a highly competitive and rapidly changing environment. The modern library service exists in a world probably unimaginable to those advocating the importance of the library movement at the beginning of the last century. Perhaps two events are indicative of the context in which the library profession now finds itself. In the mid eighties the United Kingdom followed the lead of the US by withdrawing from UNESCO in protest against its supposedly "over politicised" nature, whilst in the early nineties the NBA effectively collapsed when a number of booksellers refused

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5 For further information see: European Union DGXIII *Public Libraries and the information society study* http;//www2.echo.lu/libraries/en/plis/homeplis.html

6 DEPARTMENT OF NATIONAL HERITAGE (1997) *Reading the Future: Public Libraries Review* London: HMSO

to continue to subscribe to the agreement for commercial reasons.[7]

1.3 Public Libraries: a contemporary overview

The management and staff with responsibility for the photographic archive at the Birmingham Central Library are working within a service that throughout its history has been underfunded and inadequately provided for. In recent years the complexities associated with the introduction of information communication technologies have been compounded by the complexities of the provision itself. In addition, the library service in Great Britain has no one coherent policy objective, although in 1973 the Library Advisory Council (for England) did address the remit of the library service, stating that public libraries have four main areas of responsibility: education, information, culture and leisure (Chirgwin 1993). More recently a number of studies have attempted to define the nature and roles of the public library service. The report *Setting Objectives for Public Libraries* (Office for Arts and Libraries 1991), advocated a series of core activities for libraries including the provision of community information, reference services, economic well being, independent learning, reading and literacy, and recreation and networking, whilst the 1993 Comedia Report *Borrowed Time* took a more sociological perspective. Thirteen core functions for libraries were defined by the 1985 Aslib document *Review of Public Libraries in England and Wales* which underlined that the majority of citizens believe that the service should be controlled by their local authority. A key function advocated by the report included

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7 Whilst the reasons for the withdrawal of the US and the UK from UNESCO were manifold, Muddison believes that it was partly in response to the influx of member states from the developing world that had taken place since the 1960's. In May 1997 the incoming Labour government announced that it intended to rejoin UNESCO the following year. See MUDDISON, J. (1985) *UNESCO and Britain: the End of a Special Relationship?* Royston: Museums and Archives Development Associates.

> ... creating a public library service that will be a community asset in which local people can take pride and which others will respect - an asset that helps local people to identify with their community.
>
> (Aslib 1985)

Burkett et al have summarised the four discrete roles of the library service advocated in 1973 by the Library Advisory Council thus:

> Education: To foster and provide means for the development of the individual/group at all levels of educational ability.
> Information: To give the user quick access to accurate information over the whole range of human knowledge.
> Culture: To be a chief centre for cultural life and to actively promote participation and appreciation of all of the arts.
> Leisure and recreation: To play a positive part in encouraging an active use of leisure and recreational time.
>
> (Burkett et al. 1977: 2-3)

In addition to these responsibilities, Thompson has highlighted the repository and custodial functions of libraries.

> Libraries are the storehouses of humanistic, scientific and technological knowledge. They preserve the records of civilisation and of mankind's achievements and discoveries ... Not only do libraries conserve our culture but as agencies of communication they play an important role in its transmission.
>
> (Thompson 1982: 10)

With its many functions it is clear that the public library represents much more than "... a place, a building which is visited to borrow books and obtain information" (Baitt 1997: 218). In order to illustrate these functions and to contextualize some of the specific difficulties that have been addressed by the

staff at the Birmingham Central Library a number of issues that are indicative of those confronting the library profession have been considered.

The phosphorescent sign above the glass facade of the building dominating Chamberlain Square in Birmingham reads *Central Library and Information Services.* The job of the Library in providing an "informing" role has been separated from its many other tasks (St. Clair 1993). Clearly libraries have an important role in the provision of access to information, a role which throughout their history some believe has been fundamental to the democratic process. Garnham has underlined the importance of libraries, suggesting that

> The rights and duties of a citizen are in large part defined in terms of freedom of assembly and freedom to impart and receive information. Without such freedoms it would be impossible for citizens to possess the knowledge of the views of others necessary to reach agreements between themselves...
>
> (Garnham 1982: 282)

Whilst those within the library profession continue to provide information and educational services for the benefit of all, in recent years they have witnessed the effects of commercial agencies impacting on many aspects of contemporary culture. Although as Baitt suggests, recent years "... have seen the management of traditional public services change as competition has been introduced, not least in the tendering of contracts," (Baitt 1997: 200) the provision of publicly funded libraries appears to remain relatively secure. John Dolan, the Head of Birmingham Central Library has expressed concern about the financial penalty that is sometimes imposed on those wishing to gain access to material of historic or cultural value. "Whilst people can 'buy in' to our heritage, in doing so they may be ignoring the greater value of those

things." In developing commercial activities the changes in the library profession reflect those elsewhere in the public and private sectors. Sainsbury's offer a banking service, Richard Branson, pensions; the petrol station sells fresh bread, the library, books and theatre tickets. Greenhalgh and Worpole suggest that despite such trends the library service must continue to address the needs of traditionally absent or otherwise impoverished users.

> The role of the library in providing information services is in large part to empower citizens, and by this means to help bridge the gap between the "information rich" and the "information poor." Genuine self-improvement and empowerment involve a strong element of economic emancipation. Without a measure of economic self-efficiency it is unlikely that individuals and groups in an age of shrinking public sector resources will ever be truly empowered to transform their dreams and aspirations into reality. If access to information is made difficult, because of the costs to the individual, the capacity to improve one's situation is diminished.
>
> (Greenhalgh and Worpole 1995: 15)

It would appear that to operate effectively the library profession has to strike a balance between the traditional needs of library users and those of new and emerging clients.[8]

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8 In addition to addressing the information needs of an established and wide constituency, the library profession have been proactive in seeking new and otherwise absent users. Greenhalgh and Worpole recall that in recent years many libraries, acknowledging that they are unable to compete with commercial book selling in the field of contemporary literary fiction in particular, have attempted to complement bookshops. In so doing, Greenhalgh and Worpole believe, libraries have helped to create a "wider public literary culture." Citing a contemporary poetry promotion in Hereford and Worcester in the early nineties, the authors state that this event achieved a threefold increase in audiences at poetry readings as well as a 300% increase in book issues of selected poetry titles. The success of this promotion was attributable to the fact that it was run in conjunction with local commercial booksellers, who shared joint promotional material. (Greenhalgh and Worpole 1995:83)

Universal Provision?

Despite the commercialisation of many aspects of popular culture, most of the provision made by public libraries continues to be free at the point of delivery. Whilst a significant proportion of the public are prepared to pay for the use of such facilities as sports centres or for theatre tickets, (albeit at a nominal, perhaps subsidised rate), users expect no charge to be made for the majority of library resources or for material borrowed. At a time when the current (Labour) Government is continuing to question the merits of the principle of universal provision in a broad range of areas, not least education and health, the public library appears to represent one of the last truly egalitarian services remaining, with genuine "free" access still guaranteed to all. In 1995 (under a Conservative administration) this principle was underlined in the Department of Heritage Study, *Contracting Out in Public Libraries*, which concluded that "...there is a strongly argued case for the provision of library services to remain essentially within the public sector" (DNH: 1995).

Whilst a prime argument for the existence of public libraries is that they allow access to information by individuals whose circumstances might otherwise preclude them, Nicholas Kingsley, Head of Archives at the Birmingham Central Library, nevertheless believes that there is a strong case for imposing some financial charges. Kingsley suggests that such charges should exist either as " ... deterrents to those who might otherwise misuse the service or where the service is deemed to go above and beyond the core activities of the library - these are seen as value added services." Kinglsey believes that the library profession is unequivocal about what constitutes "core" and "value added services." At a time when information communication technologies are becoming increasingly relied upon, the

possibility must remain that such distinctions will become less and less distinct.

The notion of universal provision appears to remain deeply entrenched within the library service. This philosophy is coupled with a reluctance to embrace an entrepreneurial, profit motivated ethos. Whilst it would be churlish to accuse the profession of unfettered altruism in its desire to protect the rights of access of its users, that this principle is nevertheless discernible can perhaps be demonstrated through the terminology and language employed by some within the service. Although a preoccupation with semantics would be misleading, the use of the term "financial innovation," as opposed to "income generation," does, it could be argued, reveal a desire by those in the library profession to distance themselves from some of the more overt manifestations of commercialism and business culture.[9]

In developing its role as an information resource, in recent years the public library service has come under increasing pressure to provide a broad range of additional services to various users in a number of sectors. Martin Flynn, Central Library Manager - Arts and Leisure Services, cites the increase in the numbers of students entering Higher Education as an example. Flynn believes that many colleges and universities have "behaved in a very cavalier way", expecting much from local authority libraries, without any form of reciprocal arrangements being made. With participation in Higher Education expected to rise considerably from one in eight school leavers in 1979, libraries are being required to respond by providing additional resources in the form of books, study space and advice (Jary and Parker 1998). Although the genuine pressures voiced by Flynn should not be underestimated, on the other hand, Burkett et al suggest that the library profession has always been charged with responding to the needs of a broad user group that is continually evolving.

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9 This term has been employed by some staff within Birmingham Library Service in internal reports and documentation.

> The first task of a library is to identify its users, actual and potential, and their characteristics in order to formulate an acquisitions policy and to provide a variety of services matching different and changing needs. Public libraries have the most difficult job since their users form a heterogeneous 'population' and have no common set of features ... Potential clientele vary in age, educational background, subject interests and inclination.
>
> (Burkett et al 1977: 60)

The Library Profession

Coupled with the need to respond to the demands of a diverse and varied clientele, the library profession has of course had to respond to an unprecedented growth in the use of information communication technologies. Flynn recognises that the use of such technology has not always been welcomed by those working in libraries. "Some of the older staff feared new technology and were happier dealing with traditional materials." This genuine and understandable fear (which has the potential to inhibit the successful introduction of emerging technologies) is perhaps compounded by the fact that many librarians are introspective, often conservative individuals. John Dolan holds the view that " ...librarians, by tradition, had developed as insular people, closely guarding their collections. Whilst libraries have been a powerhouse of skills, librarians have by and large been introverted." Thompson reiterates this observation, suggesting that the perception of librarians could hinder their ability to respond to (technological) change.

> Librarians place emphasis on various techniques of conservation; on shelving systems and the making of bibliographic records; on routine processes and clerical operations. In turn this gives rise to a bureaucratic structure in libraries, extremely resistant to change and innovation. The ideal person for librarianship of this sort is

> someone who is understood to be introverted, orderly and unimaginative, so that any benefit he might otherwise derive from a popular image as a cultured, informed and intellectual person is almost entirely subverted.
>
> (Thompson 1982: 12)

Although some justification may be attached to the perception that the typical librarian is "conservative" and "introverted" - in John Dolan's words "no longer a figure of authority," - some of these characteristics may be attributable in part to the fact that the duties of librarians are often constrained by the processes of local government. Library managers are accountable to public officials who are in turn accountable to electorates. This chain of accountability inevitably slows down the pace of response to specific problems. Furthermore libraries have a unique and important function as communication conduits for the authorities in whose control they are in. In this sense, Walker believes that librarians act as "front of house communicators" on behalf of local authorities, along with "... reception staff, people who take money from the public, officers who advice the public and drivers" (Walker 1997: 39). Similarly, the physicality of the library building also serves an important function as a manifestation of the egalitarian principles of the community in which it is placed. Hoggart has reiterated the social importance of the library building, addressing as it does the communal needs of many groups, not least those often marginalised in society,

> ... old men who fill the reading-rooms of the branch public libraries ... eccentric(s) absorbed in the rituals of ... monomania ... exist(ing) on the periphery of life, seeing each other daily but with no contact.
>
> (Hoggart 1957: 60)

In addition to addressing the needs of their local users library staff face

further pressures when facilitating those using the resource from beyond the region in which the library is placed. In Birmingham, for example, in addition to housing a range of photographic material of significant local interest, the Central Library also contains material of considerable national importance. Acquired over many years, the collections mirror the trends that have dictated how libraries, museums and other educational institutions have responded to the photographic medium since the introduction of the albumen print in 1851. McCauley asserts that photographs collected by institutions before the 1890's, for example, were in virtually all cases not considered as art.

> The acceptance of photographic models (in libraries) reflected the latest progressive thought about design education, in which it was legitimate for students to study historical examples from photographs, which were perceived as exact transcripts of reality.
>
> (McCauley 1998: 35)

Local and National Responsibilities

In recent years, Peter James, the Head of Photography at Birmingham Central Library, has initiated a number of projects utilising the photographic collections in order to address the multicultural needs of the Library's local users. Projects have included exhibitions of work produced by a local portrait photographer, Ernest Dyche and images of the Bournville Estate taken by Bill Brandt in the 1940's and 50's. Whilst John Dolan acknowledges that such projects, initially exhibited and promoted *locally* - within Birmingham - "...make the collections both precious and in demand - this is an achievement," James also has a responsibility to promote the collections *nationally*. The twin demands of promoting and developing work of both local and national significance can not always be consolidated and tensions inevitably arise. It is

possible that such tensions will be compounded as libraries continue to make use of information communication technologies in order to work with groups beyond their normal constituency, both regionally and nationally. Although as Chandler suggests "...the flow of information tends substantially to be between the educationally elite or to be one way - from West to East or from the developed countries to the underdeveloped..." such trends will inevitably have a significant impact on the day to day duties of those working in public libraries, wherever they are situated (Chandler 1982: 6).

Censorship

The many pressures faced by those working with information communication technologies within libraries are further compounded by the requirement to consider the provision of access to inappropriate materials. Despite the understandable concerns voiced by many within the profession (over public access to some photographically derived material to be found on the World Wide Web, for example), librarians have been concerned with the issue of censorship for many years, with a number of cases becoming particularly prominent.[10] Although the library profession appears to uphold the twin values of freedom and impartiality, the role of the librarian has always, infact, been that of a mediator. Library users have been, and continue to be, the unwitting participants in an exercise of social control and value enforcement. Whilst providing examples of relatively innocuous materials, Thompson nevertheless makes the point that despite the pragmatic ideals of many within the library profession, there will always be restrictions placed

10 Thompson cites three cases of censorship within public libraries which are particularly notorious. Following the Second World War works by PG Wodehouse were excluded from public libraries because of the author's broadcasts whilst interned in Berlin in 1941. Racing news was blacked out from newspapers in the late 19th century because betting men tended to monopolise certain publications, whilst in the early 1960's Enid Blyton's work was censured in Australia, New Zealand and the UK as it was perceived as "not stimulating the imagination or extending the knowledge of children." See THOMPSON, A (1975) *Censorship in Public Libraries in the UK During the Twentieth Century*. Essex: Bowker. pp.137-158.

over some materials.

> There are indeed books which need to be protected from readers: expensive art books, photographic books, motor car manuals ... and so on; theft and defacement are so common that restrictions on access and use are necessary. Such controls are 'censorship' by the OED definition, but they are absolutely essential for the protection of public property and maintenance of a good public service.
>
> (Thompson 1982: 209)

Although today librarians are as likely to be concerned with the availability of on-line pornography as they are the theft of a motor car manual or the defacement of an art book, these examples nevertheless demonstrate that the issue of censorship has preoccupied the library profession for many years. Indeed censorship in libraries is probably as as old as the public library movement itself. In the last century, for example, the commercial circulating libraries exercised a considerable influence over the literature of the period, as authors only offered what they knew would be acceptable to these libraries. Popular authors adopted a form of self imposed censorship by withholding material that could not be read aloud in the family circle. Two of the most important distributors of fiction in England at the time, Mudie's Circulating Library, and that of its rival W H Smith, exerted "... a profound influence over publishers, critics and readers....(and) became virtual dictators of the literary world: and neither escaped the deserved epithet of 'censor'" (Thompson 1982: 1).

The possible illicit distribution of inappropriate materials brought about as a result of the adoption of information communication technologies within libraries would represent one of a range of new (and as yet unrealised) crimes to be committed within the public library system. As Bean suggests - the issue of mediaeval chained libraries not withstanding - crime is not readily

associated with the public library service.

> The public image of libraries does not usually encapsulate the problems of crime - although library staff may know the reality is otherwise. That image is of a quiet respectable place, somewhere in which to read and study - an institution of social control perhaps. Indeed, the library's very existence presupposes reflection and contemplation far removed from the mainstream of social life in which crime flourishes. And yet ... libraries are places in which crimes are frequently committed ... Crime, once thought alien to the world of the library, has now become part of it.
>
> (Bean 1992: 13)

It is clear that the modern library service appears to face as many challenges as it has roles and responsibilities. Furthermore, the public library

> ...in spite of financial restraints, must attempt reasonable coverage of subjects, and within these subjects, different levels ranging from popularisation to more academic treatment.
>
> (Burkett et al 1977: 60)

In addition, whilst continuing to address the complex and difficult needs of its local users, public libraries are being required to take on an international dimension to their work.

> The need to facilitate the worldwide flow of information in order to offer universal access to information is becoming increasingly important. Libraries and information services have an important role to play in encouraging universal access to information.
>
> (Chandler 1982: 3)

Although the adoption of information communication technologies will

require new protocols to be adopted and new agreements to be reached, the library profession can perhaps draw upon previous initiatives to facilitate wider international cooperation. These initiatives have included the Universal Bibliographical Control (UBC) and Universal Availability of Publications (UAP) protocols.[11] Lancaster suggests that if the library profession is successful in dealing with the many issues synonymous with the adoption of information communication technologies, it is possible that the status of the librarian could infact be enhanced and the role of the library service greatly strengthened.

> An information skilled populace will be needed to implement and exploit new technologies applied in all aspects of human endeavour. But demands for information resources can be expected to increase through other stimuli, like the need to support 'lifelong learning', to enhance the use of leisure time and to satisfy the publics' growing interest in 'participation' in the broadest sense ... Because the collection, processing and dissemination of information has become such an essential element in our lives, librarians, as skilled information providers, may encounter the opportunity to raise their social value and recognition.
>
> (Lancaster 1982: 12)

1.4 Archives

The many issues confronting the staff within the Birmingham Central Library when considering the adoption of digital technologies to facilitate work with its photographic collections are compounded further by the requirement to adhere to the principles and methodologies of those responsible for the maintenance and use of the library's photographic archive.

11 See GREDLEY, E and HOPKINSON, A (1990) *Exchanging Bibliographic data: MARC and other International Formats*. London: The Library Association. p.xvii.

The nature and scope of this extensive archive is perhaps as complex and varied as the institution in which it is placed. Much of the archive remains uncatalogued or otherwise classified, existing in numerous boxes and assorted drawers away from the public spaces of the Central Library. When considering the Library's adoption of information communication technologies to facilitate aspects of the work undertaken with its photographic archive it is apparent that distinctions have to be drawn between those functions of the service that make the organisation what it is - a *library* - and those pertaining to this "other" body of material. The archivists working with the Central Library undertake tasks distinct from those of their librarian colleagues. The importance of these tasks are paramount, not least because

> ... photography (has) profound implications for modes of communication, frameworks of knowledge, and uses of memory, (and) archives are implicated in such intellectual upheavals.
>
> (Schwartz 1998: 40)

Although it is clear that archivists and librarians have always undertaken discrete duties, Cook suggests that the use of digital technologies has infact accelerated an understanding that information - like any other "commodity" - has to be organised by individuals appropriately skilled for the task.

> The recognition that information (although a complex and elusive commodity) is something of value to most people and most organisations, and which needs to be managed, is one which has come slowly and incompletely. It was slow in part because of the nature of the information services which existed before the 'information age' began: libraries, documentation services, records management programmes and archives. The basic aims of these services, and their physical forms, were not in their original shape

> conducive to building them into programmes which could be seen as a whole, or as agencies for handling what were different forms of the same commodity. There are still tendencies which separate the different services and keep them distinct from each other.
>
> (Cook 1993: 3)

In order to contextualize aspects of the work undertaken with information communication technologies within the photographic archive at the Birmingham Central Library, some of the "tendencies" and "distinctions" (between libraries and archives) are examined further.

The Role of the Archivist

Cox suggests that archivists undertake five primary functions relating to the *appraisal, acquisition, arrangement, preservation* and *access* to the materials in their custody (Cox 1992: 10). According to the methodology described by Cox, when appraising potential material for inclusion in an archive, archivists determine which records are permanently valuable and should therefore be retained. After making these decisions the archivists will acquire the material, prior to following established archival principles in the arrangement and description of the artifacts. The archivist will subsequently refine the order of the files created and prepare appropriate finding aids, whilst working alongside professional conservators he or she will consult on the use of preservation treatments in order that appropriate access to the holdings may be offered.

The discrete roles of the archivist described by Cox are reiterated by Bradsher, who suggests that their primary function is to regulate access to the records in their custody.

> Preserving the evidence of the activities of individuals and public and private entities so that others may know and understand them is the ultimate goal of archivists. To achieve this goal, archivists have two objectives. Their most fundamental objective is is to establish and maintain control, both physical and intellectual, over the records transferred to them. In doing this archivists have a responsibility to preserve the physical and intellectual integrity of their archives, keeping them in order such as that they can be produced when required.
>
> (Bradsher 1988: 10)

Bradsher goes on to suggest that providing access to archives and the information in them is as important as preserving them "...this ... objective is impossible if the first is not accomplished, and the first objective is meaningless without the second" (Ibid). In other words, *preservation* and *access* are inextricably linked.

In examining the function of the archive Bradsher has considered the similarities with libraries.

> Although libraries often maintain archival materials and manuscript collections, their primary function is to house and make available collections of books and other printed material. Archives, on the other hand, often contain books and other printed matter (generally reference materials), but their primary function is to maintain accumulations of the records or papers of organic entities and individuals, including printed archival materials, such as manuals produced by an agency, organisation or institution.
>
> (Bradsher 1988: 7)

Nicholas Kingsley, Central Library Manager - Archives and Local Studies, has underlined the key functions of the archivist, stating that whilst librarians " ...

collect things for their information and content, these things are not usually unique and the material will probably not be kept indefinitely. The provision of access to these things is important. The archivist, on the other hand, aims to preserve unique material permanently. Usually, although not always, the material is unpublished or perhaps in unprinted form, as with original manuscripts, and may have value other than that contained in the information that it holds." The provision of access to perhaps *unique* materials is particularly important where (as is the case with the Central Library) an archive is situated within the control of a public library. The requirement to provide access on the one hand has to be carefully balanced with the preservation of the material on the other. This balance is not always maintained. The Central Library provides an example of a collection where the (albeit well meaning) activities of librarians has impacted on the integrity of materials in their custody.

Libraries v archives?

During annual submissions between c1890 and 1950, photographers were invited to participate in the Warwickshire Photographic Survey (WPS), submitting views of the county. The body of material that now forms the WPS was originally collated in bound volumes, each volume representing a particular year of submission, a particular period in time. These volumes were subsequently reorganised by librarians who classified the material by subject matter (after physically cutting them up). The integrity of the original archive was subsequently destroyed and with it the intentions of those who created it. The significance of such (destructive) actions has been considered by Schwartz (1998) who reiterates that

> ... photographs are documents, created by a will, for a purpose, to

> convey a message to an audience. To understand them as a product of actions and transactions, either bureaucratic or socio-cultural, we must return them to the action in which they participated. It is their functional context that transforms photographic images into archival documents.
>
> (Schwartz 1998: 42)

The differences in the principles and methodologies of librarians and archivist appear to be clearly apparent when considering the reappraisal of the body of images that formed the Warwickshire Photographic Survey.

> Librarians, in organising discrete units, use one of the proven, pre-determined, and logical schemes of classification for the arrangement and subject control of their material. Archivists, in organising collective, organic units, maintain them in their original arrangement, thereby providing evidence of what has gone before.
>
> (Bradsher 1988: 8)

Sekula challenges this view, stating that

> ... the unity of an archive is first and foremost that imposed by ownership. Whether or not the photographs in a a particular archive are offered for sale, the general condition of archives involves the subordination of use to the logic of exchange. Thus not only are the pictures in archives often literally for sale, but their meanings are up for grabs. New owners are invited, new interpretations are promised.
>
> (Sekula 1986: 154)

Whilst concurring with this view, Schwartz also argues that as a consequence of the "institutional practices" (described by Cox and Bradsher), the "constructed," "selected" nature of archives should not be underestimated.

> Like the documents they preserve, archives have been created by a will, for a purpose, to convey a message to an audience ... they acquire meaning in society within the context of their creation and their value is embedded in their ongoing function as a memory institution.
>
> (Schwartz 1998: 62)

An additional responsibility of those managing archives in institutions such as the Central Library is the requirement to recognise the importance and value of legal materials. In Birmingham the Library holds the archives recording the processes of local government - minutes and other legally binding documents - which are continually being generated. Such documentation requires archivists to be particularly concerned with both the security and veracity of the material held. The recognition that legal documentation requires specialised archival techniques led to the establishment of the Public Records Office (PRO) in the earlier part of the nineteenth century. Established in 1838, the site chosen in London for the PRO was the principle legal centre, the Rolls Chapel in Chancery Lane: the Master of the Rolls became the keeper of all public records. The Public Records Office is arguably one of the most important national institutions in which archival services operate. Cook has defined three types of archival organisations - *national, local* and *specialist*. In addition to the Public Records Office, the Scottish Records Office and the Public Record Office of Northern Ireland represent examples of national institutions, as does the House of Lords Record Office (which manages the archives of Parliament) and the British Library Department of Manuscripts. Local archives services are typically provided by local government. Specialist archives include those owned and maintained by large companies and multinational corporations, for example, those belonging to Thomas Cook, United Distillers and Unilever, amongst others (Cook 1986).

Archival Collections

The nature of the archival collections managed by archivists will of course depend on the the organisation that has created it, whether it relates to the processes of local government, the establishment of package holidays or the distilling of malt whiskey. In general, Cook and Proctor suggest,

> ... archives are managed by a department of the organisation which created the records. Few or no materials other than those created by the governing organisation are taken into the system and the main effort of the archives staff is to manage the accrual of new material coming into existing classes, or into new classes created by the originating departments.
>
> (Cook and Proctor 1989: 11)

Whilst it is clear that the Central Library is the prime repository for the material collated as a result of the processes of local government, significantly, much of its important and extensive photographic archive consists of material that has been created by (historically important) practitioners with little or no connection with the city of Birmingham.

Reiterating Kingsley's observations, Bradsher suggests that archivists

> ... are concerned with records, papers and manuscripts; mostly unique, non-printed material. Librarians are concerned with multiple copies of books and publications. The quality that distinguishes an archive from a library is the uniqueness of its holdings. Although libraries may sometimes contain unique items, for example, rare books, for the most part they contain collections of printed works produced for general use, whereas archives contain accumulations of

> unique documents, created in the course of specific transactions.
>
> (Bradsher 1988: 8)

This "quality of uniqueness" reflects a fundamental difference between archives and libraries. Bradsher goes onto suggest that

> Archival material is normally created as a result of some regular functional activity of a government agency or other entity. Their significance depends on their organic relation to this body and to other archival material in the same files, series or record group. Any cultural values they may have are incidental to their creation.
>
> (Bradsher 1988: 9)

The Birmingham Library Service has and continues to promote the cultural significance of its photographic collections and yet Bradsher suggests that this is "incidental" to the role of the archive. These observations once again demonstrate some of the difficulties of those working with the photographic collections in Birmingham, situated as they are in an an archive overseen by a library service and containing as they do material of significant, historical and national importance.

The Context of the Archive

The difficulties associated with promoting the photographic collections at the Central Library have been compounded by the relative position of the archive within the structure of the Birmingham Library Service. As elsewhere, despite the parity of roles shared by the public library and archives divisions, they do not represent a unified service. Each has its own priorities and

professional practices under the auspices of separate governing bodies. Furthermore, in the United Kingdom archives and libraries positions in local authority structures are far from standard. Although sometimes linked this is often in different ways. Library services may be the main function of a department, with archives services as a subordinate function - this is the model in most metropolitan districts and London boroughs. In authorities such as Birmingham, on the other hand, archive services operate within an overall library service, where the archivist in charge is a senior manager with his or her own budget. Within both of these models there is a trend for archives and local studies to be joined although differentiated from other library services. A further model is for libraries (and possibly museums and other cultural services) to be under the same overall directorate (eg Heritage, Community Services, Education, arts or any combination of these) but with the heads of the respective services in effect autonomous. Finally libraries and archives may be unconnected in the authority structure, with archives either residing in other departments concerned with administrative or legal matters, or being entirely independent.

1.5 The Birmingham Library Service

It is apparent that the archives and special collections in the custody of the Birmingham Library Service are subject to a number of unique management and technical considerations. Indeed, the very fact that collections are housed within the Central Library building has presented a number of difficulties for those managing the archive. For example Kinglsey believes that because the archives are situated away from the public within the building, difficulties have arisen when promoting the collections and making their existence known to a wider public - a lack of profile has sometimes made

harder the task of acquiring additional material. Kinglsey has also noted that further difficulties arise when users of the library (albeit mistakenly) perceive archival materials as being comparable to library stock: staff are continually addressing the problem of users marking archival materials, whilst failing to appreciate the artifacts' intrinsic, often unique, importance.

It is perhaps unlikely that many of the issues associated with the housing of the archives and special collections in Europe's largest public library were anticipated when it was officially opened by the Leader of Her Majesty's Opposition, the Rt Hon Harold Wilson MP on Saturday 12th January 1974. Today the Library is the product of acquisitions, donations and purchases made by the City's Reference Libraries over the last 120 years and reflects Birmingham's heritage as a centre for industrial innovation - the Library holds an important archive dedicated to the work of Boulton and Watt, for example. In addition, the Shakespeare Library contains over 43,000 accessions including copies of the four earliest Folio editions, whilst the Early and Fine Printing Collection contains 13,000 volumes, over 8,000 of which were printed before 1701 (James 1995).

In 1993 the authors of the Comedia Case Study *The Central Library: A Study of Birmingham Central Library in the City Centre* recognised the close links with the city that have been established by those managing the Library over many years.

> Birmingham Central Library carries a long sense of history with it. It has always held an important place in the city centre, from its establishment as an old Victorian gothic library, part of local governments' programme of providing its citizens with the staples of life. The library is founded on a history of civic responsibility and care, of which Birmingham is proud.
>
> (Comedia 1993b: 7)

Kingsley has reiterated this view stating that "In Birmingham there is a strong perception of the importance of libraries by local politicians: they understand the importance of the service to the local community." Nevertheless, despite the support given by locally elected representatives, historically, the Library Service in Birmingham has not been immune from the financial pressures continually faced by all sectors of local government. Martin Flynn has recalled that in 1996 the BLS had a 10% budget cut imposed, with the same figure withdrawn from its income in the following two years - this had led to redundancies, both voluntary and imposed, " ... with the inevitable effects on the moral of staff ... felt throughout the service."

In addition to being the largest library in the city, the Central Library is also the administrative centre for the Libraries and Learning Division of Birmingham City Council, a service which

> ... provides, promotes and encourages access to reading and information, creative arts and leisure opportunities for everyone ... (providing) high quality education for adult learners and encourage(ing) life long learning.
>
> (Birmingham 1997: 7)

These services are also provided via a network of Community Libraries and through classes at a number of Adult Learning Centres. The Libraries and Learning Division also provides library services for housebound people, schoolchildren and the inmates at Winson Green prison, amongst others.

Open each day except Sunday, the Central Library houses a large number of resources including

> ... 850 study spaces and 25 private study booths; Computer catalogue terminals; Photocopiers: Video, CD Rom and Internet facilities; Sound recordings and videos to rent; Books and play facilities for young children ... Tourist information and ticket booking services; (a) Cafe, Volunteer Bureau (and) meeting rooms for hire.
>
> (Birmingham 1997: 3)

The Central Library also incorporates a satellite of Companies House which provides a range of services, including "... information on all limited companies via an on-line public access system" (Birmingham 1997: 3). The first floor houses the Input/Output Centre, a fee-charging drop in computer facility which provides resources, advice and training support. In addition to the Head of the Central Library, the Library is managed by three Central Library Managers, each responsible for "Arts and Leisure Services," "Archives and Local Studies" and "Business, Science and Social Sciences."

Residing within the Department of Leisure and Community Service, the Libraries and Learning Division is placed alongside a number of other divisions, including (for example) those responsible for museums and recreational provision. Although tensions inevitably arise when issues of disparity emerge within such large administrative departments - librarians and archivists probably have little in common with sports centre managers or park rangers, for example - Kinglsey nevertheless believes that such problems can be minimised ".... as long as professional respect exists in the line management of the service." As with the good relationships with the locally elected representatives (cited by the 1993 Comedia Report), Kingsley's view is that a supportive ethos of mutual respect is prevalent within the professional management responsible for the Leisure and Community Services Division.

The Central Library

Once infamously described by the heir to the throne as an incinerator, where books are more likely to be burned than held for the public good, the Central Library comprises of seven tiered floors surrounding a central atrium. In recent years this central space has benefited from the addition of a roof and developed to contain a range of retail and cafe facilities. The atrium forms a bustling pedestrian thoroughfare between the shopping and administrative areas of New Street and the canal side developments of Brindley Place, Centenary Square and the International Convention Centre (ICC). Whilst for many years the Broad Street area of Birmingham remained blighted following the demolition of numerous factories and industrial workshops, the construction of the ICC has led to the rejuvenation of this quarter of the city, with many shops, cafe bars and night clubs straddling the newly pedestrianised streets. The Library has, as result of these developments, become truly central, not only in terms of its administrative significance, but also in terms of its geographical location. Wagner suggests that the two most important issues in siting public libraries in metropolitan regions is their centrality and accessibility - "two signifiers of their solidarity with the community" (Wagner 1992: 48).

As a result of urban planning happening *around it*, the Central Library has perhaps only recently been able to signify its solidarity with the community of Birmingham. The 1993 Comedia Study reiterated the importance of the library as a city centre venue, citing

> ... the vital (but often overlooked) role which public libraries play in attracting a diverse range of users and in maintaining liveliness and a sense of civic space in many of Britain's towns and cities

> increasingly dominated by retailing.
>
> (Comedia 1993b: 2)

The authors of the same report carried out a street questionnaire in order to establish a straw pole of the Library usage. The figures gathered at the time suggest that the library was well regarded by those questioned. Of the respondents approached, 67% had visited the Central library in the previous year - 36% had visited the library to study, whilst a similar number of people had visited the library in order to borrow books, tapes or videos. Around 24% went to the Library in order to search for local history whilst a comparable figure accompanied children. 15% of those asked went to the library to search for reference material and other information, whilst 7% visited either the gift shop or the ticket office (Comedia 1993b).

The Birmingham Library Service: Policies and Strategies

Although the BLS is successful in providing a broad range of services to a diverse range of clients, some criticisms of its provisions have been voiced. In 1992 the BLS, along with seven other public library authorities, participated in a national study *Borrowed Time: The Future of Public Libraries in the UK.* The research

> ... sought to find a new rational for public libraries in an era of cultural de-regulation, local government restructuring , the commercialisation of information and the growth of home based leisure.
>
> (Comedia 1993a: 1)

The report noted that in Birmingham, despite the value placed on the library

service by the local community and their locally elected councillors alike, the City's corporate strategies had nevertheless failed to

> ... acknowledge the important role played by the library as an attractor of people, particularly those sections of the population targeted by the Council in its equal opportunities policies.
>
> (Ibid)

The study went on to suggest that it

> ... was precisely in the traditional library's role in providing a safe and secure destination for women, and for ethnic minority groups that the City might have valued more positively the function of the Central Library.
>
> (Comedia 1993b: 3)

Partly as a consequence of this study John Dolan recalls that "... in the 1990's Birmingham City Council focused the Library Service to think much more about policies and strategies. The Council has developed policies and strategies relating to children and young people, poverty and the disadvantaged, learning and economies and employment and training."

1.6 Conclusion

The UK library service has evolved over many centuries. Since mediaeval times progress in the advancement of the public library movement has often owed much to the philanthropic support given by individuals who have promoted religion through the provision of books and other learning materials. Today the public library has a number of roles relating to education, the provision of information, culture and leisure, addressing the

needs of a diverse, expanding and fluid constituency of users. Where, as with the Birmingham Central Library, the demands of librarianship are placed alongside those of archival and curatorial responsibilities, tensions inevitably occur. Difficulties in the preservation and access of materials often arise where a range of materials reside within one environment. In recent years advancements in the capabilities of information communication technologies have required library managers to re-address the needs of their users and to monitor the effectiveness of the service that they are giving.

As this thesis goes on to consider, digital technologies allow librarians, archivists and curators to work with the public in hitherto unknown and unexpected ways. The possibility exists that the (accepted) processes of control and mediation will be more bilateral than the methods currently employed. Furthermore, recalling what was once a criminal act, Woolley suggests that it is possible that the library of the future will allow interaction between the user and its contents.

> With a conventional library, you can only borrow work, you cannot, at least not without becoming an author and finding a publisher, contribute to it. When the playwright Joe Orton so famously did in 1962, adding rude comments to books borrowed from his local library, he fetched up in jail.
>
> (Woolley 1992: 160)

Although staff within the Birmingham Library Service have continued to use digital technologies since the inception of Prestel in the early 1970's, many fundamental questions relating to how ICT's might be most appropriately employed remain, as yet, unresolved. Having considered the broader context to the work of the BLS, the following chapter examines the impact of digital technologies on the production, preservation and dissemination of photographic images. A number of technologies that archivists, librarians and

curators may wish to employ in their work are considered. Possible *implications* of using these technologies are explored in the latter sections of the thesis.

Summation

In summary this chapter has outlined the following points:

- Historically the evolution of the public library service has been both slow and difficult.
- Libraries are potentially powerful forces for both social and political change.
- In recent years Governments' have yoked the public exploitation of information communication technologies to the public library service.
- Public library provision within the United Kingdom has often been both underfunded and reliant upon philanthropy.
- To date there has been little communication and coherence between separate public library authorities.
- Public libraries have four broad roles relating to education, information, recreation and leisure.
- Users of public libraries are wide ranging and reflect a varied and often "fluid" constituency.
- It has been acknowledged that library professionals have a tendency to be both "conservative" and "introverted".
- Librarians have always had a mediation role.
- The Birmingham Library Service, when considering its photographic archive, has both a local and national remit.
- Archives are important entities in relation to communication, knowledge and memory.
- The Birmingham Central Library has been perceived by both its critics

and a number of its users as being both "central" and "accessible".

The substantive implications of these points I believe are as follows:

- As skilled information providers, librarians could "enhance" their role if they facilitate the use of information communication technologies by a wider public.
- Whatever similarities and differences exist between libraries and archives, *access* and *preservation* are inextricably linked.
- Information communication technologies have the potential to allow materials to be used in innovative, "bilateral" ways.
- With the increasing use of information communication technologies, the emergence of the future role of the public library service is likely to be as slow and difficult as its past evolution.
- As powerful instruments of social and political change, the responsibilities associated with adopting information communication technologies within public libraries are profound.
- The difficulties associated with the "local" and "global" remit of libraries are compounded by new global "communications".
- The importance of libraries being both *physically* central and accessible must not be overlooked, whatever technologies are adopted.

CHAPTER TWO

DIGITAL PHOTOGRAPHIC TECHNOLOGIES

2.1 Introduction

This chapter is concerned with the impact of digital technologies on the production, curation and dissemination of photographic images. Its purpose is to consider how digital technologies are affecting the way photographs are produced, organised, disseminated and viewed. The rationale is to review some of the issues relating to the deployment of information communication technologies confronting photographic archivists and other custodians of photographic materials - particularly those working in public libraries. **Chapter One** considered the evolution and current position of the public library service in the UK. This material describes aspects of the technology that librarians and archivists may wish to employ with photographic collections. The intention is to provide knowledge and understanding about digital technologies - the *implications* of the library service adopting such technologies are considered in the latter components of the thesis. A range of initiatives and activities have been cited, with the aim of demonstrating the prevalence of this technology. The purpose is to reiterate that such technologies are not "new," although, of course, they continue to evolve exponentially. Indeed, in photography's sesquicentennial - 1989 - the *Wall Street Journal* estimated that 10% of all colour photographs published in the US were being digitally retouched or altered in some way (Mitchell 1994: 16). Over a decade later this figure is likely to have risen considerably.

After describing the characteristics of digital media, the chapter goes on to provide a brief summary of the history of both on-line and off-line technologies. The chapter then addresses a range of important issues for photographic librarians and archivists working in the public sector. Issues relating to the preservation and dissemination of photographic material are

explored, as are the implications of ICTs' on copyright and (photographic) markets. The conclusions to this section inform the remainder of the thesis by reiterating the broader context in which the introduction of information communication technologies within libraries - for the facilitation of access to photographic archives - is occurring.

2.2 Characteristics of digital media

Feldman describes digital information as manipulable, networkable, dense, and compressible (Feldman 1997: 3). Feldman suggests that the

> distinction between analogue and digital information (is) so important in digital media technology (because) what you can do easily with digital information ... you cannot readily do with its analogue counterpart ... The unique features of digital information are the key to its commercialisation and ultimately to its potential impact on our lives.
>
> (Feldman 1997: 4)

Before examining the history of the evolution of digital media in recent years, Feldman's characteristics of digital media are examined further in order to provide a clearer understanding of the capabilities (both actual and potential) of the technologies being considered and deployed by photographic librarians and archivists.

Prior to the development of digital media, Feldman argues that the publishers and distributors of information, education and entertainment were in a position to dictate what consumers viewed or read "... with only a modicum of selectivity left to the customer's discretion" (Feldman 1997: 5). Television and radio channels (the VCR and programmable cassette recorder

notwithstanding) ensured that certain programmes could only be viewed at preordained times. Furthermore, the television and film industries have been founded (very necessarily) on linear storytelling methods: the products have a sequence - a beginning , a middle and an end. Feldman argues that because information in digital form is manipulable, ". ... this dictatorial model ... so firmly established in our experience of media products ..." may become redundant.

> In the digital age, while old models are unlikely to be swept away totally, new models will emerge which will alter our expectations for ever. Increasingly, users of media will find the power to control experiences shifting in their direction. While, of course, originators and publishers will continue to determine the constraints within which this new found freedom is experienced, there is no doubt that the old model will ultimately come under pressure from the new.
>
> (Feldman 1997: 8)

Moreover, because digital information is networkable, information can be shared and exchanged by large numbers of users simultaneously, both locally and globally. Although reliant on a complex (and costly) infrastructure, networks have nevertheless transformed the economics of media distribution as simultaneous access to networked information allows the distribution of the same underlying content many times over, without the difficulties associated with moving physical products (books, video tapes, photographs ...) through a supply chain. As discussed elsewhere in this text, a number of critics have suggested that networks represent not only powerful distribution conduits but are also a means of creating new forms of (electronic) "... communities ... free of the constraints of space and time" (Jones 1997: 10).

Although it is clear that there are benefits associated with the use of networks, it is equally apparent that until networks emerge that are capable

of handling large files routinely, physical storage platforms (optical and magnetic) will continue to represent a (relatively) easy way of moving multimedia content from one physical location to another. Moreover, because digital information is *dense*, information can be held in a small physical space. The ability of both physical storage platforms and networks to hold and transmit large amounts of information has occurred in part because digital information is *compressible*.

> Before the digital age and the emergence of digital compression technologies, we were stuck with the various bandwidths we had (ie the electromagnetic spectrum which has long been used by television and radio broadcasters). Before we had to fiddle with the (information conduits) to find more capacity. Now we can fiddle with the information we propose to send ...
>
> (Feldman 1997: 8)

An additional characteristics of digital media, that distinguishes it from analogue media, is that it can be copied indefinitely, with no loss of quality.

> The continuous spatial and tonal variation of analogue pictures is not exactly replicable, so such images cannot be transmitted or copied without degradation. Photographs of photographs, photocopies of photocopies, and copies of videotapes are always lower quality than the originals, and copies that are several generations away from an original are typically very poor. But discrete states can be replicated precisely, so a digital image that is a thousand generations away from the original is indistinguishable in quality from any one its progenitors. A digital copy is not a debased descendent but is absolutely indistinguishable from the original.
>
> (Mitchell 1994: 6)

By describing the "discrete states" (which allows digital media to be copied infinitely) Mitchell makes reference to binary code, the "language"

used by computers. Consisting of just two symbols, the digits 0 and 1, each of the binary symbols (either 0 or 1) is known as a bit - a contraction of binary digit. A digital image is made up of a series of bits amounting to a mosaic of information which is used to form an image on a computer screen. There are two methods of creating a digital image.

> A digital image can be recorded directly - where a digital camera registers the image projected by the lens as a pattern of 1s and 0s or ... indirectly, where a conventional photograph is scanned into (a) computer, transferring the tones and colours of the original image into ... digital code.
>
> (Wright 1999: 151)

The digital camera operates on the same principles as the photographic camera but without film. As discussed, in place of film, a Charged Coupled Devise (CCD) - records the pattern of light formed by the camera lens in the form of digital code.[1] To obtain a scanned image, flat artworks (photographs or transparencies) are placed in a scanner, where a light is passed over the image, dissecting it into thin horizontal strips. This light is reflected, via a lens, onto a CCD which in turn records the image as a modulated pattern of electric current. This pattern is transferred to the computer for storage and can be viewed using a computer monitor made up of picture elements (pixels), consisting of thousands of dots of light. Each pixel is composed of red, green and blue rays of light which are balanced on screen to display a particular colour (in a similar way yellow, magenta and cyan are used when colour printing in traditional photography). The number of bits needed to serve an individual pixel depends upon the monitor used.

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1 Although the CCD was invented at the Bell Laboratories in 1969 by William S. Boyle and George E. Smith, in the mid 1950's scientists working at the US National Bureau of Standards constructed a mechanical drum scanner capable of tracing variations in intensity of light reflected off the surface of a photograph. See KIRSCH, R.A, and CAHN, L. (1958) *Experiments in Processing Pictorial Information within a Digital Computer Proceedings of the Eastern Joint Computer Conference*. New York: Institute of Radio Engineers.pp.221 - 229.

2.3 The evolution of digital media

When considering the history of digital media technologies it is convenient to make an assumption that there are two types of media: on-line and off-line. In reality it is not easy to distinguish between off-line and transmitted media - increasingly the two are converging to bring about new modes of digital production and distribution. However, for the sake of clarity, the evolution of optical media - specifically the CD ROM - and that of the Internet (and the World Wide Web) are recalled separately in order to highlight the speed at which these technologies have impacted on the work of libraries and the custodians of photographic materials. Whilst other storage platforms exist, (not least, of course DVD), CD ROM technology has been examined as this technology has become prevalent in both commercial and domestic contexts. It is also the technology that has been appropriated by many picture libraries for the off-line transmission of (digitised) photographic images.

Whilst the history of those off-line and on-line technologies that are being considered and utilised by photographic librarians and archivists is important, so too is the evolution and development of the hardware that forms the interface with the user and the software employed - the computer. Mackay recalls that the personal computer was not developed as a result of the corporate (capitalist) activities of a large organisation (like Philips or Sony) but emerged from the "counterculture" of California.

> It was here that the technological developments were made, the industry and many of its household names (such as Apple) were created, and the very nature of home computing was established. The home computer emerged from the culture of enthusiasts -

> hobbyist and hackers. These enthusiasts emerged from the male DIY/hi-fi culture, and were motivated not by corporate profit but by a concern to change the world and to empower ordinary people.
>
> (Mackay 1997: 259)

Despite the apparently altruistic motivation of those driving the development of the technology, paradoxically, the evolution of the computer industry occurred at a time of significant (capitalist led) shifts in consumer trends and modes of consumption.

> Exemplified in neo-liberalism - specifically in Reaganomics and Thatcherism - consumer choice became the obligatory pattern for all social relations and the template for civic dynamism and freedom ... The 1980's also heralded the subordination of production to consumption in the form of marketing: design, retailing, advertising and the product concept were ascendant, reflected in postmodern theory as the triumph of the sign and the aestheticization of everyday life.
>
> (Slater 1997: 10)

Certainly the distinctiveness of the "product concept" of the Macintosh computer was as an important aspect of its desirability - and ultimately success as a consumer product.

The Emergence of an Information Society

Soon after Steve Jobs and Bill Gates began constructing the foundations of their future business empires on America's west coast, in the UK entrepreneurs such as Clive Sinclair began to profit from the massive interest generated in the emerging computer society. Although Sinclair's early computers - including the ZX80 - could do very little, (they had no

printer, let alone screen), millions of sales were nevertheless made. Whilst purchasers of the ZX80 could use the machine to learn about aspects of computing (albeit to no tangible effect), ownership did at least represent participation in the embryonic information society (Haddon 1988). It was not until the arrival of the the Amstrad PCW8256 that a home computer released in the UK market was actually capable of undertaking a specific task. Following a period in the mid-eighties when the home computer market expanded with the rapid growth of home computer games, in recent years the PC market has been subsumed within the business machines industry. "(The) shift from a hobbyist machine, to a business machine, to a consumer good was ..." Mackay asserts "... the outcome of a complex set of processes whereby the very nature of the technology was contested and transformed" (Mackay 1997: 268).

One of the factors that led to the segmentation of the computer industry and the expansion of the computer games market - contributing to the "commodification of leisure" (Slater 1997) - was the development of the CD ROM and the home entertainments industry that exploited this technology. Slater suggests that this development was indicative of a period that witnessed the creation of products aimed at particular groups:

> (The) modern, Fordist mass production of standardised goods for mass consumption by homogeneous consumers has given way to postmodern, post-Fordist specialised production of goods more specifically tailored and targeted on precise consumer groups who are defined by lifestyles rather than by broad demographic variables like class, gender or age. There is a different dynamic of consumption.
>
> (Slater 1997: 174)

The appropriation of technologies (such as CD ROM technologies) for purposes ostensibly related to leisure have perhaps facilitated the trend

towards the evolution of the (western) home as an essentially autonomous, self-sufficient unit. In this sense it is possible to make links with the home computer boom of the late eighties and nineties (related as it was to the development and use of CD ROMs for running games software) with the emergence of television decades before. Williams argues that whilst the development of television was considered by many as a technological breakthrough, it should perhaps be considered as the product of both the disintegration of communities and the exodus from the country to the city that occurred with the forces of industrialisation, along with the "privatisation" of leisure and the increasing preference for independent, autonomous rather than public or collective pursuits (Williams 1974). Whilst the media world, including television, is becoming less reliant on discrete technologies - digitisation is contributing to the intertwined forces of convergence, competition, interactivity and choice - the trend towards the "privatisation" of information consumption and communication processes continues.

Laser Vision

The development and consumption of ICTs' (including *home* computers) has provided those responsible for the custody and dissemination of (photographic) materials within public libraries with both new opportunities and difficulties. The use of both off-line and networked CDROM based systems is one of many technologies considered by librarians and information professions in recent years. The immediate antecedent of the Compact Disc was the video disc. In the early 1980's the *Laser Vision* video disc generated considerable interest as a publishing medium. Emerging from the Philips laboratories in the late 1970's, *Laser Vision* was based on encoding multimedia information on the reflective surface of a silvered 12

inch disc using a fine laser beam. (*Laser Vision* was originally a propriety name used by Philips, but is known today generically as 'laser disc.') During playback another laser beam is passed over the surface of the spinning disc, acting as a "stylus" of light. Although not a digital medium, the video disc nevertheless provided an insight into subsequent interactive multimedia developments (Sigel 1980). The standard disc offered up to 55,000 frames of information, each with its own unique electronic address or frame number. It was possible to access any individual frame by calling up that address and displaying its contents. Furthermore, because the disc offered radial access to its contents, an individual frame or sequence of frames could be located and retrieved very quickly. The combination of these two factors meant that by placing the disc under computer control it was possible to create an interactive multimedia experience, incorporating images, sound and text.

Despite the potential of the technology employed, the hopes of manufacturers in the late 70's and early 80's across consumer, professional and business markets were not realised. The only substantial markets for interactive products at the time proved to be in dedicated applications. Video discs were commissioned and produced to address a single bespoke purpose - rather than providing a product speculatively for a wide range of possible customers. Although the use of laser disc technology for multimedia applications failed to materials in the way some market analysts had predicted, in the early nineties the European Laser Disc Association (ELDA) published sales statistics which indicated a resurgence in Europe of a consumer market interest in the linear playback of feature films and music videos. Despite this trend, Compact Disc technology, based on digital technology, was to emerge as the basis for the development of multimedia products in subsequent years.

CD ROM

The CD ROM, launched in 1985, resulted from an initiative led by Philips and Sony, the creators of the audio compact disc. Whilst backed extensively by the computer hardware industry, the step from CD audio to CD ROM had been difficult. Although in both cases the information on the discs consists entirely of bits, in the case of CD ROM the bits had to be stored in a specific and standard fashion to allow different types of computers to access the information. It was not until the late 1980's that the International Standards Organisation agreed a universal specification for all CD ROM discs, designated as ISO 9660. This became the defining specification for all forms of CD ROM technology and resulted in the rapid expansion of the CD ROM publishing industry.

Despite the eventual clarification of standards represented by the ISO designation, the early CD ROM publishing industry was infact thwarted by the speed at which the technology had evolved. Publishers were reluctant to release titles because there were very few CD ROM drives in the hands of potential customers. Potential customers were reluctant to purchase drives because there were very few titles to buy.[2] Soon, however, a cohort of professional and corporate purchasers of CD ROM began to emerge, with librarians and academic researchers representing the main users. Comparatively expensive products began to be sold to a relatively small number of organisations which could afford them. A high priced, low volume business developed, with titles typically selling a few hundred copies at prices which varied from hundreds to thousands of pounds sterling.

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2 At the end of 1986 only 6,500 drives were installed worldwide. Eight years later this figure had risen to 25 million.

Pricing Models

As the number of CD ROM titles available began to increase, two basic pricing models emerged which are still commonplace for professional CD ROM products today. CD ROM producers either make a one off sale - usually because of the market orientation at a very high price - or, more commonly, sell subscriptions which give users access to a series of discs in the course of a year, embodying (typically) monthly, quarterly or six monthly updates of the underlying content. The notion of selling "access" in this pricing model is fundamental to this business. Selling means not selling the physical disc. The customer purchases - by paying a subscription - a licence which permits them (under certain stated conditions) access to the information stored on the discs. By creating licensing agreements publishers can protect the valuable contents of the discs from illicit use. Obvious dangers are the resale of data, downloading and illegal copying - perhaps placing the CD ROM on a network in order to enable a large number of users to gain access to a single disc. Subscription based selling also ensures that publishers receive the outdated discs back from customers when a new version is created. Otherwise, as publishers have discovered to their cost, a black market of old discs exists, supplying others less fussy about how up to date their products are. The appeal of (bona fide) CD ROM content is based primarily on the ability of the technology to offer both rapid search and analysis features. These are perceived as offering high levels of benefit either because of the time they allow to be saved or because they help users make more accurate decisions (or both).

Although CD ROM was derived from the consumer technology of CD audio, it was (re)interpreted as a professional information product primarily because professional markets were the only sectors at the time with the

hardware to drive the products. The massive growth in the market in personal (home based) computers in the mid-nineties had yet to take place. In order to develop the domestic use of CD ROM, Philips designed Compact Disc Interactive (CD I) for the mass consumer market. A combined multimedia computer and CD ROM drive was effectively disguised in a black box connected to the family television. The hardware was deliberately designed to look un-computer like, being more compatible with hi fi and video paraphernalia found in domestic living environments. Describing this trend, Slater suggests that

> Essentially, new image technologies in everyday life overwhelmingly take the form of 'home entertainment': commodities which are conceived, designed and marketed in relation to private family leisure.
>
> (Slater 1995: 130)

CD I ultimately failed because an uncomprehending public did not, at this time, understand the concepts of either interactivity or multimedia. Furthermore, consumers who had to (actively) use their television remote control to access the content may have found the experience daunting. Feldman argues that early titles which offered interactive cultural and educational experiences were also excessively demanding. "Titles like *The Russia of the Czars* and the *Treasures of the Smithsonian* , beautifully produced as they were, were too much hard work for the average consumers" (Feldman 1997: 47). Whilst Slater acknowledges that in relation to domestic image technologies "... in most marketing ... the core theme is home entertainment ..." the marketing of CD I seemed to follow an established trend, with its "... other functions (especially education) ... offered as justifications for major domestic expenditures of time and money which might otherwise feel frivolous" (Slater 1995: 131).

The failure of CD I illustrates that when new technologies arrive they do so within the context of existing media, including the organisations, professional practices, media forms and regulatory practices associated with them. Williams (1974) suggests that neither software, nor uses, are necessarily built into technology - at the time of their arrival these are shaped, negotiated, contested and (as with CD I) sometimes, "ultimately rejected."

On-line technologies

Along with increased sales of CD ROM titles (which has occurred alongside the rapid expansion in the domestic PC market), the sales of modems, which allow users access to on-line networks (principally the Internet and the World Wide Web), have also increased exponentially in recent years. This trend reflects the rapid growth in the use of and development of the Internet in the past twenty years, a development which has occurred in three discrete phases. The establishment of a network of computers for defence purposes developed rapidly after the invention of the World Wide Web and the creation of (so-called) "user friendly" graphics based Web Browsers.

Built in the 1970's, the Internet was originally conceived as a small but crucial project of the US Department of Defence Advanced Research Projects Agency (ARPA). The intention was to create a communications system able to link a variety of computers which would continue to operate after the outbreak of nuclear war. Under the auspices of ARPA, the project initially involved several US government research agencies and a number of universities. By 1978 the so called Kahn-Cerf protocols (named after their inventors) had been refined to control communications over a prototype network. These protocols quickly evolved into the Internet protocols (IP or

transmission control protocol - TCP/IP) currently in use in millions of host computers all over the world.

The initial (defence based) aim of the protocols was almost forgotten as academic and research communities (first in the US, and then more globally) began to develop the original protocols into a full suite which offered a range of possible applications. These applications included file transfer protocol (FTP), which allows the transfer of computer files across a network - effectively making a remote computer behave as if it was connected to the local network of a distant host. E-mail also began to be developed and refined at this time. As such the foundations of the Internet were built by academics and researchers, fluent in the highly specialised and complex language of computers. In essence the Internet had been an environment designed by computer users *for* computer users. The change that occurred came about primarily because of the invention of the World Wide Web.

Led by Tim Berners-Lee, in the late 1980's and early 1990's a group of physicists at the European Laboratory for Particle Physics, CERN, were interested in extending the functionality of the Internet. Berners-Lee was particularly interested in developing a way of introducing hypertext links to documents held on Internet servers, in order that a trail of interest among research reports could be followed. By highlighting a word it was hoped to be able to be taken directly to another part of the same document or to another relevant document on a completely different server system. Berners-Lee's team realised their objective by creating a new Internet protocol called hypertext transfer protocol (HTTP). By inserting special codes - derived from a new mark up language they devised called hypertext markup language (HTML) - hypertext links could be created in electronic documents. The system ascribed a unique address to documents (and pages within documents), held on servers - these addresses were called universal

resource locators (URLs). When a code was activated, it automatically pointed the user at the URL of the related information, wherever it was physically located. Using the system it was possible to "jump" from page to page, document to document, server to server, creating "a web of inter connectivity" spanning the Internet. Releasing details in early 1991, Berners-Lee and his colleagues called their invention the World Wide Web (Wilde 1999).

Web Browsers

In its early days the Web was as difficult to operate as the Internet itself, based as it was on a Unix command language. The massive rise in the (non specialist) use of the World Wide Web only came about as the result of another single invention - the Web browser. Non expert users in their home and office environments began to use the World Wide Web in ever increasing numbers after the creation of a (relatively) easy to use, graphical point and click window through which the Web could be viewed and navigated.

Details of the first browser were released in the autumn of 1993 - about six months after Berners-Lee had published details of the World Wide Web. Called Mosaic the software was authored by a team of young programmers, led by Marc Andreeson, at the National Centre for Supercomputing Applications (NCSA), a department of the University of Illinois in Chicago. The impact of Mosaic was almost instantaneous - largely because (in accordance with the ethos of the research community at the time) Andreeson and his colleagues made it freely available via the Internet. Whilst students and academics became the first to download the software, within a matter of months millions of people worldwide followed. Companies offering dial up access were quickly formed in order to meet a growing demand, providing

low cost subscriptions that gave both admission via fast leased connections and the software needed to gain access to the Internet. America On-line and (in the UK) Demon Internet, amongst others, provided packages which included e-mail, access to discussion groups, the ability to download software from distant hosts and, significantly, a Web browser. From early 1993 to early 1999 the number of consumers with dial up access from their homes grew from zero to about 10 million world wide (Wilde 1999).

In mid 1994 Andreeson and many of his colleagues left their University surroundings and joined forces with Jim Clark, the founder and former CEO of the computer hardware company Silicon Graphics (Quittner and Slatalla 1998: 83). Clark had established a new organisation, Mosaic Communications. With the creators of the original Mosaic successfully employed, Clark instigated building a new form of the original browser. The result was probably the best known and most widely used browser, Netscape Navigator. Having lost Andreeson and his colleagues the University of Illinois forced Clark to change the name of his company from Mosaic to Netscape Communications. In the autumn of 1994 Netscape Communications began giving away the enhanced Netscape Navigator from the company Web site. Six million people had downloaded the software by March 1995. Within a matter of months Netscape had become the standard Web browser. By giving away the web browser Netscape Communications were not acting altruistically. Netscape Communications had created a huge market of users dependent on their (initially free) product. The company was subsequently able to sell web site operators server software (for thousands of dollars) which complemented the features of the Netscape browser. Although very much in its initial phase, with many technological developments and refinements still to be made, the foundations of the global network, allowing the distribution and dissemination of digitised information, *by non-computer experts*, had nevertheless been put in place.

2.4 Digital media and photography

Photographic archivists, curators and librarians, would, it seems, have little in common with either dentists or automotive engineers. And yet representatives of each of these professions met at the London home and UK headquarters of Richard Branson's Virgin Group in January 1996. They were there not to discuss the benefits of a possible new pension plan, but to attend a presentation given by New Media Solutions. The company, owned by Virgin, had recently become the UK distributor of the cataloguing and database software, *Image XS*. New Media Solutions had temporarily requisitioned the family front room to sell the product to possible purchasers. In effect, one piece of software was being sold to a disparate group of individuals, with the promise that the technology involved would represent possible solutions to a range of specific "problems" each profession confronted: in the case of the dentists, the retrieval of dental records and x-rays, the engineers, car components and the assorted photographic professionals, photographs old and new.[3]

The Evolution of Technology

The impact of digital technologies on the broad swathe of professions that deal with the photographic image has, and continues to be, considerable. Trying to make sense of this impact is often made difficult by the fact that the technology has invariably been sold to, and appropriated by, diverse and seemingly unrelated groups. Noble (1984) suggests that in contrast to the pessimism of the Frankfurt School, (in which consumers are seen as passive

3 Led by Keith Griffiths, Marketing Manager, New Media Solutions and attended by the author, the presentation was made to members of the Committee of National Photographic Collections on 17 January 1996.

recipients of the products of corporate capitalism), the products of technological developments often evolve away from any initial vision as a direct result of the proactive role in the innovation process played by consumers.

> Close inspection of technological developments reveals that technology leads a double life, one which conforms to the intentions of designers and interest of power and another which contradicts them - proceeding behind the backs of their architects to yield unintended consequences and unanticipated possibilities.
>
> (Noble 1984: 46)

The consequences and possibilities associated with the (continuing) development and evolution of digital technologies compounds the difficulties associated with any attempt to consider their impact on the acquisition and dissemination of photographic images. Although Mitra is here specifically concerned with the utilisation of telematics, the argument relating to the continued evolution of technology is relevant to all research examining its impact.

> At best it is possible to identify a period in time and obtain a snap-shot of the image being produced and circulated. That conclusion is neither binding nor exhaustive since, ever-metamorphosing and ever growing, the 'nature of the Internet beast' continues to change every minute (literally), undermining any claims of authenticity that researchers can have of their reading of the network discourse. Researchers need to be aware of this, and thus be cautious and prepared to accept the fact that the image is indeed transitional and is bound to change with time...
>
> (Mitra 1997: 76)

Whilst accepting that the current picture is indeed "transitional" and that the

nature of the "photographic beast" continues to change, the significance of the technological changes brought about hitherto can nevertheless be scrutinised and evaluated. Those working with photographic archives within public libraries as elsewhere, have, of course, not been immune to these changes, required as they have been to address a range of issues associated with the implementation of digital technologies.

Whilst at the turn of the millennium the proliferation of digital multimedia products has resulted in considerable changes in the production and dissemination of photographic images, Dewdney and Boyd (1995) remind us that diversity in the uses of of lens based media is nothing new.

> The designation of a specifically multimedia form within digital technology at the end of the twentieth century serves as a reminder that combined audiovisual technologies have been in continuous use since the mid-nineteenth century. Victorian dioramas, silent cinema, slidetape presentations, theatre sets, happenings, Disneyworld rides, are all examples of public forms of multimedia.
>
> (Dewdney and Boyd 1995: 151)

Furthermore, any examination of the merits, or otherwise, of the use of technology must separate the method of dissemination (the technology employed) from the meaning of the artefact concerned (the "content" of the photograph). Whilst reviewing a text-fiche version of Dorothea Lange's Farm Security Administration photographs, for example, Colin Osman wrote

> It is immediately obvious that however excellently the work is done, the images ... can only supply information about the (original) image content rather than the (original) image quality.
>
> (Osman 1984: 1279)

Clearly Osman is critical about the consequences of employing (for "photographic" purposes) technology that has been designed principally for the storage of information contained in manuscripts and books. As with the presentation given by New Media Solutions, this example - the use of text-fiche - along with those cited by Dewdney and Boyd, illustrates that the adoption of unrelated technologies for purposes photographic is not novel.

Pathfinder and the death of the Princess of Wales

The significant impact that digital images are having on the hitherto silver based medium of photography can perhaps be demonstrated by the role such images played during two prominent news events that occurred in recent years - the *Pathfinder* mission to Mars and the death of Diana, Princess of Wales. The images sent from the Sojourner Roving vehicle to NASA's Jet Propulsion Laboratory in Pasadena, California, during July 1997 were gathered using Kodak image sensors - the same sensors used in the company's DCS - 500 digital camera (*British Journal of Photography* July 16, 1997). This type of equipment is being increasingly used by photojournalists and news gatherers throughout the world. The high quality images, viewed in real time as the Rover vehicle traversed the Martian landscape, demonstrated the technological advancements that have been made since the first images were beamed back from the Lunar landscape thirty years ago. Indeed, the development of digital imaging technologies has coincided with the era of space exploration, ensuring that

> digital imaging systems quickly began to play much the same role in twentieth century voyages of discovery as topographic and botanical artists had played in eighteenth century ones: they represented

> previously unseen marvels and inventoried potentially colonizable territory.
>
> (Mitchell 1994: 11)

The same digital technology used on the Sojourner vehicle was utilised just a few weeks later during the funeral of the Princess of Wales. The London based agency Fast News Photos (FNP), employing five photographers equipped with Mobile Digital Imaging and Transmission (MODIT) systems, was able to electronically transmit still images of the proceedings to customers within twenty minutes of taking them. The system comprised of a Canon DCS3 digital camera, a laptop computer and transmission hardware. Many national and regional newspapers used the images on the same day and on the following Sunday and Monday (*British Journal of Photography* October 1, 1997).

Whilst the death of the mother of the future king was significant in terms of the photographic technology employed on the day of her funeral, the days both preceding and succeeding this occasion were also notable in terms of the event's impact on the seemingly expanding media of the Internet and in particular, the World Wide Web.

> One dramatic week later, Britain no longer looked like an old country and the world had its first insight into the ways that a global visual culture has the possibility to change everyday life in an instant.
>
> (Mirzoeff 1999: 231)

The news of Diana's death was disseminated both via traditional channels - television and radio news bulletins, along with print based media - but also

significantly, via telematics. Thus, at 1pm BST on Sunday 31st August, less than 9 hours after the fatal events in Paris, it was possible to read a summary of the news on a number of web pages at different sites globally. The *Michigan News* website, for example, related how President Clinton, on holiday on Martha's Vineyard, had been "profoundly saddened" by the accident, which was broken to him at 11.45pm EDT. In the following days, programmers and designers acting on behalf of Buckingham Palace created a website dedicated to the life of Princess Diana which contained an interactive "condolence book" (www.royal.gov. uk/Diana). After the opportunity of posting a few lines of e-mail to readers unknown (the young princes', an embittered brother?), the site responded with the message "Thank you for your kind message of condolence on the sad loss of Diana, Princess of Wales." In the following weeks the site received over 20 million hits, making it, along with the Pathfinder site, one of the most "visited" web sites to date.

Whilst it would not be unreasonable to assume that the creation of the "virtual" condolence book was an attempt to utilise the technology of the World Wide Web for compassionate and benevolent reasons, responding to the needs of a specific "user-audience,"[4] in the following weeks controversy was fuelled by the appearance on an American web site of an unattributable photograph purportedly depicting the dying Princess in the wreckage of the al-Fayed Mercedes. This "unofficial" coverage of this major news event became news itself. The dissemination of a "photograph" by digital means became the focus for intense media speculation about the role of the Internet and issues pertaining to censorship. Significantly, the "...photograph contained nothing obvious to suggest it (had) been tampered with, or made up from separate images, or if it (was) genuine" (*The Guardian* September 15, 1997). An even wider debate about the right to privacy and the role of the so

4 Mitra uses this term to 'capture the dual role of the Internet participant', who is at once part of an audience, whilst simultaneously 'empowered to become an agent to mould the (discursive) space as he or she wishes'. MITRA, A. (1997) Virtual Commonality: Looking for India on the Internet *in* JONES, S.G. (ed) *Virtual Culture: Identity and Communication in Cybersociety* London: SAGE. p.60.

called "paparazzi" followed soon after.

Technological Implications

Why, then, would a photographic archivist, undertaking his or her sedentary duties, wish to employ the digital hardware associated with the high tech and frenetic activities associated with such operations as news gathering or space exploration? Why would these archivists wish to replace "atoms with bits" (Negroponte 1995: 11) and what are the main implications of undertaking such a course of action?

The utilisation of computer mediated communications by photographic archivists and curators are affording new opportunities for the dissemination and exhibition of photographic images. In addition, the scanning and electronic storage of old, rare, fragile or simply dangerous photographic material has been promoted as a means of conserving such images for the benefit of future users. Indeed, the photographic collections at Birmingham Central Library are in part made up of images containing cellulose nitrate - an extremely volatile and unstable substrate, liable to ignite with sometimes explosive consequences. Despite some obvious advantages associated with the deployment of digital technologies, nevertheless, the dissemination of digitised photographs has led to significant problems in the interpretation and enforcement of existing copyright laws, problems often precipitated by the potentialities associated with the economic and fiscal exploitation of such images. These four issues relating to the digitisation of photographic images - preservation, dissemination, copyright and the impact of digital technologies on existing and emerging markets - have been identified as being particularly relevant to the work of custodians of photographic collections and others responsible for the development of such archives, not least those operating

within the public library sector.

2.5 Preservation

The digital creation and storage of photographic images has had a significant impact on their preservation and conservation. As Randall asserts, it is important that such terms are clearly understood.

> Restoration is the technical process of attempting to bring back a item to its original appearance as closely as possible. Conservation represents remedial treatments and practices carried out to prevent further deterioration to materials. Preservation is a much more all embracing term including all the steps taken in the process of preserving, not just the physical item itself, but also its intellectual content. Preservation represents a total preventative policy.
>
> (Randall 1991: 140)

Within the context of the work of libraries Feather et al reiterate this definition of preservation, highlighting the

> the managerial, financial and technical issues involved in preserving library materials in all formats - and/or their information content - so as to maximise their useful life.
>
> (Feather et al 1996: 159)

Ostrow (1998) suggests that digitisation as a preservation tool must compliment existing (tried and tested) methods.

> The option of using digital images as preservation surrogates can be a valuable supplement to (though certainly not a substitution for) an ongoing preservation program that follows such traditional

> strategies as improving storage conditions (with special reference to temperature and humidity control) and using film as a medium for preservation copying.
>
> (Ostrow 1998: 21)

Here Ostrow reiterates that no conservation process - digital or otherwise - should "be allowed to remove, diminish or obscure in any way (any) document's value," (Baynes-Cope 1994: 18) or alter the "historical evidence" inherent within it (Ellis 1978: 316).

As one of many options available to conservators and archivists, the digitisation of collections does allow (albeit facsimiles of) material to be examined closely. Whilst describing the British Library's Electronic Photo Viewing System, *Pix*, Carey (1998) has noted that when digitised photographic materials are viewed using the electronic browser employed, considerable amounts of detail contained in the original (non-digitised) images can be perceived.[5] Furthermore, prior to the introduction of *Pix*, due to preservation reasons, many photographs held by the British Library had to be viewed in low light conditions, an environment not conducive with scrutinising materials thoroughly.

In addition to the ocular benefits digital technologies are providing, ICT's are being increasingly employed to provide contextual and historical information about photographs. Digital means of cataloguing photographic material can give the librarian and conservator a useful set of tools, enabling information to be provided about both individual photographs and whole archives of work. It could be argued that photographs archived digitally

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5 Established in 1993, the British Library Electronic Photo Viewing System, *PIX*, is an image database written and developed for the Library by iBase Image Systems Ltd. The system "... allows users easy and instant access to thousands of images held by the Library." See CAREY, P. (1998) Pix Project *in* CARPENTER, L., SHAW, S. and PRESCOTT, A. (eds) *Towards the Digital Library: The British Library's Initiative for Access programme*. London: The British Library. pp.85-95.

may have enhanced significance as a result of librarians and curators being empowered to communicate additional (contextual) material.

In recent years the custodians of photographic collections housed in libraries, museums and galleries have embraced the opportunities afforded by the adoption of digital technologies with considerable alacrity. Ostrow considers some of the implications for this trend:

> As visual collections become more vulnerable to damage and as their monetary value and susceptibility to theft increase, the current trend toward more restrictive access to the originals will accelerate. The use of digital images as research surrogates will grow accordingly, with access to the originals restricted to those circumstances where it is absolutely necessary.
>
> (Ostrow 1998: 21)

Ostrow goes onto describe an example where access to original materials has been restricted as a result of digitisation.

> The Library of Congress's Farm Security (FSA) photographic collections is a case in point. As part of an initiative that includes copying the deteriorating nitrate and diacetate negatives, all of the images in the collection are being digitised. When the research surrogates of these images become available, they will in all probability be served in lieu of the originals, unless viewing of the original is absolutely necessary to the research.
>
> (Ostrow 1998: 22)

In a similar initiative, in May 1996 those responsible for the collections at the Science Museum in London announced that they were to begin to make the Museum's entire collections accessible through the adoption of telematics (*Museums Journal* May, 1996). Many repositories have also created CD ROM

packages of the collections within their custody, contributing to the rise in the number of CD ROM titles available. Significantly it has been suggested that the proliferation of such materials has been brought about primarily by the predominant use of CD ROM in academic and special libraries as opposed to public libraries (Hanson and Daly 1994: 2).

Information Overload?

Whilst Steinberg claims that due to the exponential use of digital technologies "... the long-moribund fields of knowledge organisation and information retrieval are, once again, showing signs of life," (Steinberg 1996) it has been argued that the sheer profusion of such material will in itself cause the potential user of these additional resources to be overwhelmed by the vast quantity of information available - perhaps with a counter-productive affect.

> (It) is possible to have so much information that the ability to understand it is impaired: the important cannot be distinguished from the unimportant and too large amounts of information simply cannot be absorbed. While the notion of having too much information might seem paradoxical, it is also the case that only a certain amount of information can be dealt with at one time.
>
> (Jordon 1999: 117)

Whilst in social terms the organisation and appropriation of such material is often

> ... successful at putting people together, enabling co-operation ... it does little to foster association in the sense of intimacy and fellowship.

> The former is an intellectual process and one of action, the latter is an act of humanity and reflection - and community.
>
> (Jones 1997: 29)

Exploring this theme, Sardar believes that there are dangers associated with conserving materials in digital form, particularly when addressing the needs of a largely apathetic, predominantly Western, audience.

> Cyberspace is particularly geared towards the erasure of all non-Western histories. Once a culture has been 'stored' and 'preserved' in digital forms, opened up to anybody who wants to explore it from the comfort of their armchair, then it becomes more real than the real thing. Who needs the arcane and esoteric real thing anyway?
>
> (Sardar 1996: 19)

New "Truths" ?

By adopting digital technologies for undertaking the task of selecting, editing and adjusting possibly disparate photographic elements, those utilising the medium are further empowered with the ability to create new identities, new "truths." The advertisement for the HP Photo Idea Kit (supplied with Hewlett Packard ink cartridges) carries the slogan "Change Whatever You Want" against a backdrop of fake ads for fat reduction and cosmetic surgery clinics.[6] This campaign and the need for it is revealing in so far as domestic consumers require *ideas* to generate an interest in "warping, retouching and adding special effects" to their images.[7] As Slater suggests

6 Hewlett Packard Advertising Campaign, November 1999.

7 Ibid.

> ... snapshot photography - images taken by ourselves of ourselves ... has barely any place at the new electronic hearth. It is very early days yet for the digital domestic snapshot, whether scanned, frame-grabbed from a video or taken on a digital camera.
>
> (Slater 1995: 131)

In addition to the software products now marketed by the likes of Hewlett Packard (in order to sell more ink cartridges), a number of high street laboratories now offer a service whereby (family) photographs may be scanned and digitally "re-touched" to remove unwanted blemishes, creases, fading or relations.[8] This process ultimately leads to homogenisation and is analogous with that identified by Sekula when describing the (re)production of photographs in book form

> ...visual differences can be homogenised out of existence when negatives first printed as industrial glossies and others printed on flat paper and tinted by hand are subjected to a uniform standard of printing for reproduction in a book.
>
> (Sekula 1986: 155)

Once scanned and created as digital files, photographs invariably look "similar," far removed from their original form, causing the loss of much valuable information relating to the appearance, type, size and age of the original materials. In order to minimise the loss of such information, when digitising collections

> ... (there) must be a presumption that an honest effort has been made to replicate the original image digitally to the degree that the

8 The Jessops Digital Imaging Centre in Glasgow offers a range of services on a sliding scale. For £19.95 they will repair basic damage: "Improve contrast, repair or retouch one scratch or blemish, but otherwise only minor retouching". At the other end of the scale, for £49.95 the service includes the "Removal of unwanted objects, pets or people from photos."

> technological constraints allow - any deliberate or unavoidable deviations must be documented.
>
> (Ostrow 1998: 10)

Despite manufacturers claims made about their longevity and stability, research suggests that some optical storage systems are unstable and prone to failure. If research that has indicated that CDROMs' have a life expectancy of a mere 15 years is proven, it is clear that this technology will fall short of the expectations placed in it by many who have undertaken to replicate photographic material in digital form.[9] In addition, those who have initiated such projects appreciate that the process of scanning and providing photographs with appropriate descriptions is both time consuming and unreliable.

> Digitising photographs for high-quality applications puts high demands on the imaging system and the human operators involved in the task.
>
> (Frey 1999: 45)

At present there are no alternative methods to bypass these time consuming and laborious processes, which are subject to human error, perhaps leading to missing or (worse) erroneous information being attached to the images scanned. Whilst a field of research examining the potential of image recognition and the retrieval of photographic images has grown with the expansion of ICT's, a concurrent development has been work exploring the fundamentals of the digital preservation of materials held within libraries.

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9 In an article 'Digital Archive for the Future - Stability Guaranteed', published in the *Photographic Materials Conservation Group Newsletter*, Autumn 1996, Mhair Handley of the Royal Commission of the Historical Monuments of England, concludes that degeneration of magnetic and optical disks is inevitable. This issue is compounded by problems associated with obsolescence and the lack of international standards in formats and software. See also TASK FORCE ON ARCHIVING DIGITAL INFORMATION (1996) Preserving Digital Information: Report of the Task Force on Archiving Digital Information *Commission on Preservation and Access / Research Libraries Group* May 1

This area of investigation has been the particular remit of both the British Library Research and Innovation Centre (BLRIC) and the National Preservation Office (*BLRIC Research Bulletin 16* Spring 1997). Both institutions have determined research priorities, with each contributing to the the formulation of a national preservation policy relating to the adoption of digital technologies.

2.6 Dissemination

In 1997 one of the world's oldest monasteries, St Catherine's in the Sinai, acquired a Sinar digital camera system to "document the monastery's treasures and provide pictures on demand for publication" (*British Journal of Photography* March 16, 1997). Whilst the images produced by the monks will no doubt be used for print based publications, they could equally be incorporated into CD ROM material, or find their way, either legally or illicitly, onto the World Wide Web. Furthermore, they could be compressed and distributed globally by an individual with a predilection for images about holy orders via an obscure newsgroup (alt.pictures.monks.old.?). Either way, the digital images could be disseminated via "traditional" means (books, pamphlets, posters) or by information communication technologies - CD ROM, telematics, etc. Whilst it is apparent that those monastic images that are distributed via, say, CD ROM, (so called "off-line" technology) would reach audiences distinct from those receiving the pictures via telematics ("on-line"), - with differing and significant implications - for the purposes of this discourse (at this stage) no distinction has been made about the method of distribution of digitised images. Although, as discussed in subsequent chapters, it is recognised that the consequences of distributing digital images via off-line and on-line methods vary, here the focus has been to consider some of the broad *reasons for*, and the *consequences of*, disseminating

photographs by digital means.

The term "dissemination" has here been employed to embrace the notion of "exhibition," although the specific implications of librarians and archivists employing ICT's to undertake the discrete tasks of distributing and selling photographic images are addressed subsequently. The rapid evolution of information communication technologies has created many semantic anomalies - the terminology of the medium still appears to be very much in its evolutionary phase. Whilst it may be possible to exhibit - "show or reveal publicly, for interest, amusement, in competition, etc" (*Oxford English Dictionary*) - photographs on the World Wide Web, the term dissemination has been used to encapsulate such distinct notions. The comparatively anodyne definition of dissemination - "to scatter, spread" (Ibid) - is arguably more appropriate when discussing a medium that, by definition, does not exist in real space. The many cultural associations attached to the exhibition of photographs in the physical space of the gallery or other such institution - placed so at to respond to the requirements of a specific audience - become annulled when considering their dissemination via information communication technologies.

Unless the holy brethren of the Sinai were acting for mainly altruistic or apostolic reasons, the images of their "treasures" will presumably be used to generate income. Certainly, in many sectors, the desire to disseminate images via digital means has been driven by profit. Indeed, the commercial benefits associated with the digitisation of photographs is arguably the primary reason for much of this work being undertaken. Nevertheless, as the ever increasing number of snapshots found on individual's and family "home pages" testifies, digital photographs are also being disseminated for non-commercial reasons, with the anticipation that a mutually beneficial discourse will result. Digital photographs are also being used to supplement

existing media, notably television and print, often forming the illustrative, picture component of the otherwise predominantly text based material found on the World Wide Web. Carey (1993) argues that this latter trend - the convergence of digital technologies resulting in new forms of media - could compound heterogeneous tendencies that are already emerging in many societies.

> We are living, engineering and hardware notwithstanding, in a period of enormous disarray in all our institutions and in much of our personal life as well ... Media may be converging ... Social convergence does not follow the technical convergence, however.
>
> (Carey 1993: 171)

Such trends represents a particular challenge to the institution of the public library, which, as has been seen, aspires to address the needs of all sections of the communities in which they are situated.

Entrepreneurial Initiatives

The ability to create new markets for the dissemination of images by digital means has in recent years led to a number of entrepreneurial initiatives being undertaken by those involved with photography. One such initiative was instigated by the *Network* photographer, Judah Passow.[10] In January 1995 Passow founded Further Vision, a company "... set up to investigate CD ROM technology and photojournalism" (Passow 1996). Responding to the apparent contraction "... of markets and ... the commitment of traditional forms of dissemination, ie, publishing" (Passow 1996) Further Vision set out to create the CD ROM, *Days of Rage, Beirut 1982 - 1985,* in order to explore the

10 Founded in 1987, Network is a London based photography agency, specialising in photo-journalism.

viability of creating new markets for photojournalists. The production incorporated many of Passow's photographs combined with explanatory text and narration. Similar motivations in exploring the commercial possibilities associated with the dissemination of photographs by digital means led the Parisian based American photojournalist Gary Matoso to establish Focal Point - "an interactive photo and electronic journalism production group ... devoted to photojournalism" (*British Journal of Photography* March 5, 1997). Utilising digital technologies Matoso undertook an "on-line essay," *The Russian Chronicles*, "a ten thousand mile, three month experiment" which resulted in the photographer sending images and text produced in the former Soviet Republic "across the Internet" (Ibid).

Whilst both of the initiatives cited represent the efforts of two photographers in promoting their own, individual, work, other projects have relied on the collective contributions of a number of photographers. On the 8th of February 1996 over one hundred photographers across the globe posted photographs to an on-line project, *24 Hours in Cyberspace*. Organised by the publishers of the *Day in the Life* series of books, the stories covered ranged from "a Brazilian soap opera featuring lovers who met on-line, to computer classes for Inuits and an e-mail based Women's Democracy Workshop in Albania" (*The Guardian* February 8, 1996). Having collated the material the organisers planned to publish a selection of the photographs in book form and on CD-ROM. It is apparent that the organisers were driven by a clear economic objective in exploiting the electronic media of the Internet to collect, publicise and disseminate the photography produced. However, with Passow and Matosa it is also possible to detect a sense of altruism in wishing to disseminate their work. It would appear that neither is motivated purely by commercial gain, rather that they wish to share the tangible results of the passion that drives them and others like them to undertake often dangerous assignments as photographers.

Although it appears likely that Passow and Matosa were not entirely driven by profit in undertaking their experimental digital projects, it is likely that the creators of the US based service, *Photo Net*, were less magnanimous in their approach. Set up by Hewlett-Packard in partnership with Picture Vision, the service comprises of an "image infrastructure that enables photofinishers to give their customers a service ... offering an additional medium for viewing and sharing photographs on the Internet" (*British Journal of Photography* July 16, 1997). Clearly the enterprise is profit led, with the providers of the service having no involvement with the content of the images electronically manipulated or disseminated. The involvement of a major company such as Hewlett-Packard illustrates the financial backing that such commercial projects often require. In the UK many projects utilising telematics and photography have only been made possible with the release of funds through public subsidy. The Medical Images Digitised Reference Information Bank (MIDRIB) project, for example, was funded by the eLib programme though the Higher Education Funding Council (HEFC). MIDRIB aims to allow authorised users access to medical images via the Internet, allowing for easier clarification of diagnosis and the subsequent treatment of medical conditions. Public subsidy, increasingly made available through the release of funds generated by the National Lottery, has resulted in many photography institutions in the UK benefiting from improved funding for capital projects. Funding has been forthcoming for a series of building refurbishments in addition to the acquisition of new premises. The National Lottery's first major grant for photography was secured in March 1996 by the National Museum of Photography, Film and Television (NMPFT), allowing the institution to re-build its Bradford centre with the £13.25 million funding made available.

Media Centres

As a venue devoted to lens based media and the production and dissemination of (photographic) digital imaging, the NMPFT has a very high profile. Such centres often form the regional foci for a number of smaller, independent, organisations, many of which are publicly funded by the Arts Council through the Regional Arts Boards.[11] Whilst stressing the importance of existing centres Dewdney and Boyd envisage the evolution of new types of media organisations.

> We have in the UK a national network of independent Art and Media centres which are ideally placed to develop an access point for technology and a base from which to develop collaborations on both a local and international scale. Beyond even this, we can envisage newer kinds of public institutions, media labs, interactive museums or networked community centres. Without the necessary links between the private consumption of new media and public institutions where communities of users can discover new purposes and intentions and recognise communities of interest, multimedia will continue along predictable lines. The powerful interests of the multinational communications and media industries have already made it clear that the private domestic user is the paradigm point of profitable consumption.
>
> (Dewdney and Boyd 1995: 168)

The importance of the centres described by Dewdney and Boyd often resides in their function as "sympathetic" venues - practitioners representing a range of abilities and skills can meet to discuss work produced by both themselves and others. Ironically perhaps, the importance and position of

11 In addition to providing revenue funding for arts organisations, the Arts Council of England also provides development funds for discrete projects. The demands for funding for multimedia projects rose from 13% in 1996 to 70% in 1997, when £120,000 was directed towards Internet projects. Source: *The Guardian* August 14, 1997.

such venues could be undermined by the possibilities afforded by the dissemination and exhibition of photographic material via telematics. In February 1997, Judah Passow sat in a London office and gave critical feedback about the work of three photographers. The images had been sent to Passow electronically via the Internet from Birmingham. The critique, organised by the Birmingham based organisation *Seeing the Light*, formed part of the pilot project in its annual *Open Sesame* event, which aimed at giving critical responses to aspiring photographers by established practitioners. Passow's comments were subsequently posted alongside the appraised images on a dedicated web page. In a similar initiative the possibilities associated with the exploitation of telematics for the dissemination and exhibition of photography have been explored by the creators of the *Aperture Gallery*, the creators of the *World Internet Photography Awards*. In April 1997 photographers were invited to submit prints for inclusion on the *Aperture Gallery* web site where the work would be exhibited, thus making it eligible to win a proportion of a $20,000 prize fund.

In addition to the possibilities associated with the dissemination of digitised photographic images outlined, such images are increasingly being employed to supplement existing media. When the IRA ended their first cease fire by detonating a massive bomb at 7pm on Friday 9th February 1996, bringing devastation and loss of life to the Canary Wharf area of London, they had selected their target carefully. This area of Docklands houses the production centres of many publications and national newspapers, thus ensuring even greater media coverage than might have otherwise been afforded. Forced to respond immediately, a number of national newspapers used the event and the destruction of their offices and print plants to explore the opportunities offered by digital technologies and the employment of telematics. *The Guardian*, for example, utilised its presses in Manchester for the production of all of its Saturday editions, whilst simultaneously creating

web pages incorporating identical copy, diagrams and photographs (*UK Press Gazette* February 1996). Those responsible for other media forms are also examining the possibilities associated with the creative employment of telematics. Broadcasters are increasingly directing viewers and listeners to web pages, whilst a number of producers are inviting audiences to respond to the content of their programmes via e-mail, often in real time where the programme is live.

The dissemination of photographs by digital means is, then, affording new and innovative opportunities for the consumption of images. New outlets for photography are being created - new contexts in which photographs are viewed. Sekula reiterates the importance of context whilst considering "traditional" modes of photographic reproduction.

> Conventional wisdom would have it that photographs transmit immutable truths. But although the very notion of photographic reproduction would seem to suggest that very little is lost in translation, it is clear that photographic meaning depends largely on context. Despite the powerful impression of reality (imparted by the mechanical registration of a moment of reflected light according to the rules of normal perspective), photographs, in themselves, are fragmentary and incomplete utterances. Meaning is always directed by layout, captions, text, and site and mode of presentation ...
>
> (Sekula 1986: 155)

New digital technologies can not "transmit immutable truths" any more than conventional photographic technologies. What the two technologies do share is a reliance on the "site and mode of presentation." The meaning of photographs disseminated via digital means will in part be dictated by the packaging of the CD ROM, the design of the digital interface, the content of the web site.

2.7 Copyright

The control of digital images involves complex issues. Problems associated with copyright and information communication technologies are compounded in relation to digital photographs because such images

> ... do not necessarily come embedded in manufactured material substrates, like texts in books and musical performances on records: often you can just download them from a database. In multiple and sometimes subtle ways they resist treatment as privately owned material commodities.
>
> (Mitchell 1994: 53)

Recent examples have highlighted new trends and methodologies in the way that rights are assigned to digital images. In order to illustrate the nature of the legal issues involved, a number of copyright "problems" and "solutions" have been examined. The purpose is to demonstrate the myriad number of issues that are currently encapsulated by this area of law. As the technology evolves so too do the legal implications of its adoption.

Many of the legal issues associated with the use of digital media have been addressed in codes of practice and mutually binding agreements. Responding to the needs of its member organisations, the British Association of Picture Libraries and Agencies (BAPLA) has drawn up a pro forma "Internet and On-line Agreement." This document is both lengthy and exhaustive, indicative of the extent to which those operating in this sector are required to protect their interests. These interests have not only been affected by the manner in which photographic images are disseminated and distributed through the utilisation of digital technologies, but also by the simultaneous creation of new markets and commercially exploitable

audiences. One such trend has led to the proliferation of so called "clip art" companies supplying "royalty free" images. Invariably collected from the out takes of commercial photographers, images are sold to buyers at minimal cost. Typically available on CD ROM, but increasingly accessible through on-line libraries, photographic images can be purchased for as little as 70p each. Significantly, the users of royalty free images - clip art companies have targeted publishers and others in the media, in addition to private individuals - do not hold the copyright to the material. Where such material is used in theory the photographers and models who created the image are entitled to appropriate remuneration. In reality, however, such rights are not respected, with no process for payment existing.

The dissemination and utilisation of "royalty free" photographic images is in some ways comparable with the "free" distribution of software. (The proliferation of the use of telematics has also seen an increase in the availability of so called "shareware.") On the other hand, Barry (1996) argues that the distribution of such software

> epitomises a fundamental belief held by many in the computer community that the building blocks of (the) information society must be free and that knowledge can no longer be a commodity controlled by the few.
>
> (Barry 1996: 137)

Clearly such altruistic notions are in direct opposition to the economic well being of many whose livelihoods are dependent on the "economic price" such information represents - not least those who run photographic picture libraries both in the public and private sectors. Indeed BAPLA has refused membership to clip art companies as they do not offer "rights control, exclusivity and service" (*British Journal of Photography* July 9, 1997).

"Counter" Technologies

The advancements in the digital technologies that have enabled images to be copied and disseminated with relative ease have occurred alongside other advancements in "counter" technologies - in particular, technologies developed to annul some of the effects of the (illegal) distribution of digitised photographic material. Whilst Phillips have developed and successfully licensed hardware capable of copying CD ROMs, manufactures are introducing technologies in an attempt to counter such capabilities. In the case of digital images, technologies have been developed that will facilitate processes whereby the rights to such images can be assigned, possibly allowing for financial penalties to be incurred where such infringements can be proven. It has been estimated that 95% of the content of commercially operated "adult" web sites has been illegally copied from legitimate sources, demonstrating not only the profitability of this type of material but also the ease with which images can be acquired for commercial gain (*British Journal of Photography* March 19, 1997). A number of technological developments which represent possible "solutions" to the "problem" of copyright infringement have been made by a number of companies operating in this field. Highwater Signum, for example, have developed a system whereby an alpha-numeric attachment can be assigned to digital image files. This irremovable attachment can contain archival information about the original image, including information about the source of the photograph. In July 1997 Kodak announced that it had developed a colour negative paper capable of "holding" information about the photograph printed on it. This additional information is only detectable when the image is scanned using appropriate hardware.

It is likely that the adoption of electronic watermarking techniques

developed by companies such as Highwater Signum and Kodak will in future comprise just one approach within a panoply of methods available to those wishing to protect their rights and counter the fraudulent dissemination of digitised photographic images. However, these rights are only as secure as the legislation framed to protect them, whether they are rights of the individual freelance photographer, the public's rights - in the case of photographic material held within libraries and museums, for example - or the rights of company directors and shareholders - including those operating stock library companies. In recent years a number of legal anomalies have emerged - some as a direct result of the increased exploitation of ICT's in an increasingly competitive sector.

The 1988 Copyright, Designs and Patent Act was in part implemented to protect the rights of individuals. Many self employed photographers have benefited from the increased protection against the illicit use of their work as a result of this legislation. One clause, however, ensured that institutions and organisations also benefited. The 1988 Act states that the rights to *any* image remains with the work's creator - *except those working for an employer.* Paul Gardiner, Head of Photography at the British Museum, believes that this one clause has had a significant impact on the sale of images held within the public sector - particularly material held within museums and galleries. Gardiner suggests that as a result of this legislation museums and galleries have been able to benefit from the sale of reproductions of artifacts and images held in collections photographed by their employees (Gardiner 1996).

Copyright anomalies

Despite the perceived advantages to institutions afforded by the 1988 Copyright, Designs and Patent Act, subsequent legislation has undermined

some of these benefits, particularly where public institutions have sought to use digital technologies to disseminate and publicise work held in their collections. For example, a law dealing with publications rights, operative since 1 December 1996, automatically gives exclusive rights to the person who first makes available to the public an out-of-copyright, but previously unpublished work - rights equivalent to copyright protection of 25 years (*Museums Journal* June 1997). This legislation becomes problematic if institutions seek the services of independent media companies. The legislation effectively means that if institutions contract out the creation of web sites or the production of off-line material (CD ROMs, videos, etc) to independent producers, the publications rights of this material can, where the rules apply, be lost. The vexing scenario that institutions may inadvertently lose the ability to license their own content is further compounded by the fact that the same legislation allows the publisher of the material (the independent company) to assign the newly acquired rights to the material - images or manuscripts, for example - to another organisation, with no obligation to seek the consent of the institution holding the original artifacts. The relative ease by which digitally created facsimiles of images and other material can be made, and more importantly, copied, is of particular concern to institutions holding original material. This legislation, and the implications of its application to digitally created copies of original works, provides just one example of the many legal and contractual problems relating to copyright that institutions are being forced to address.

The many copyright issues confronting custodians of (photographic) archival materials are further compounded by the disparity of legislation between nation states. The increasing use of electronic media and telematics, which, by definition, do not respect political or geographical boundaries, makes widespread abuse of intellectual property rights all the more likely. Where allegations of copyright abuse can be substantiated in order to take

any case to law success becomes dependent on the legislation operative within the country in which it is heard. A case in the US raised the issue of what constitutes a legal copy of an original artifact. Representatives of the London based Bridgeman Art Library contested that the US clip art publisher Corel had illegally used electronically reproduced images of classic paintings by artists such as Van Gogh and Cezzane on a series of commercially available CD ROMs. Bridgeman had originally photographed the works of art with the permission of the museums and institutions which house them. Bridgeman argued that they had paid royalties to the museums for the use of the photographs and that by appropriating these images for their own use, Corel were infringing their copyright. Significantly, representatives of the library stated that they were proceeding with the action as much for the museum's benefit as well as for their own, reiterating that Bridgeman pay museums over £1m a year in royalties. The case was based on the concept of ownership of copyright relating to an electronic copy of a photographic image of a work of art. Bridgeman subsequently withdrew the case, recognising, albeit reluctantly, that in US law at least, the photographic reproduction of a painting did not necessarily constitute an original work.

Whilst it could be argued that the subtle intricacies of the copyright laws of any one country become irrelevant, undermined when subsumed by the global context in which they are placed, the importance of such legislation is nevertheless paramount. What are probably required, however, are new "global" agreements, legislation formulated by, and enforceable in, separate nation states. Indeed, in an attempt to augment the legislation operative within individual countries, both the European Union and the United Nations provide examples where collectively countries have sought to address many issues relating to copyright protection and the utilisation of digital technologies. A European Directive dealing with digital technologies and information retrieval, specifically designed to protect the contents and

integrity of commercially run databases, became operative in the late nineties, whilst the World Intellectual Property Organisation (WIPO), a specialised agency of the United Nations, has been convened to consider issues relating to copyright law and the Internet (UN 1996: 1433).

Clearly the issue of copyright and the employment of digital technologies is complex. However, the principle that the rights of individuals and institutions should be upheld in an increasingly competitive photographic image market has to be adhered to, despite the obvious difficulties of enforcement and the relevance of existing and, indeed, new laws. Whilst it is understandable that photographic librarians should feel daunted by the power of the technology, resigned to the fact that copyright abuse will inevitably take place, such apathy brings with it the danger of domination, with power being wielded by a handful of "infocrats" (Benedikt 1996). Indeed, it would appear that some of those responsible for controlling hitherto unrelated sections of the media are keen to extend their influence into the digital photography sector. In the mid nineties executives at *News International* not only refused to make payments to a number of photographic agencies for material used for its on-line versions of *The Times* and *The Sunday Times*, but also suggested that the company takes a 50% share of any images sold through its on-line publications (*British Journal of Digital Imaging* March 13, 1996). Copyright violation and the illegal dissemination of digital photographs will not merely occur in the modem whirring back bedrooms of the new dirty mac brigade - it will continue to become a recognised and accepted strategy of large, influential, corporations. Although the ownership of photographs held in archives has always been synonymous with property, that property, through the exploitation of digital technologies, now has increased currency and worth. The economic implications of the financial exploitation of such property, through the hitherto relatively limited utilisation of digital technology, have to date

merely been the precursor of much bigger trends, the effects of which, for photographic archivists and librarians in all sectors, will be considerable.

2.8 Markets

It is perhaps not surprising that the expansion of the digital dissemination of photographic images has occurred at the same time as that of the photographic picture library industry, which grew 30% per year in the 15 years up until 1995 (*Creative Review* November 1995). The reasons for this growth are varied. In addition to the increased use of print media, new markets for photographic images have been created with the development of the Internet, the licensing of new television channels and the creation of multimedia publishing.[12] The economic potential associated with the creation of photographic picture libraries can be demonstrated by the highly specialised members of BAPLA. In addition to the plethora of stock libraries holding images of (happy) people, (sun drenched) landscapes and (cute) animals, BAPLA also represents libraries that contain photographs of subjects ranging from railways to scarecrows.

Whilst the commercial sector is able to fill gaps in the photographic image market - an archive of photographs of scarecrows would appear to represent the concept of niche marketing taken to the extreme - public collections of photographs, managed appropriately, are nevertheless able to operate effectively in this highly competitive sector. Libraries (such as the Central Library) and museums have both quality and quantity, something few commercial companies can match. The management of photographs in

12 Nigel Skelsey, the picture editor of *The Sunday Telegraph*, illustrates the growth in the use of photographic images that has occurred in the last ten years. "At the beginning of this decade, the Saturday edition of a journal like The Daily Telegraph consisted of a single 48 page section, all in black and white. Since then it has matured into a ten section colour newspaper, including a glossy magazine, all for the astonishing price of only 45p." *Image*, 283, April 1999, pp.12-14.

public collections may embrace curatorial decisions made for the specific purpose of exploiting the economic potential associated with such archives. Jane Carmichael, Head of Photography at the Imperial War Museum, cited how during 1995 curators were "encouraged" to "develop the potential" of material relating to the fiftieth anniversary of the end of the Second World War, specifically with the aim of exploiting the commercial possibilities associated with the photographic material dealing with this era. This scenario demonstrates how curatorial decisions about photographic archives, as with other types of material, are inextricably linked with wider economic issues. Whilst the efforts of those managing the photographic material held by the Imperial War Museum demonstrate their effective utilisation for the purposes of generating much needed income, a further example illustrates where an organisation with charitable status operates in a wholly commercial market, having "separated out" the various uses which can be applied to the photography within its control. The National Trust's photographic library operates on a purely commercial basis. Staff are able to provide high quality, professionally produced photographs of properties and land owned and managed by the Trust. The quality of the material held and the service provided enables the charity to charge commercial rates for the photography supplied. This London headquarters library specifically does *not* have a conservation role, this having been devolved to various regional offices, each of which houses slides and other photographic ephemera which is inappropriate for commercial use but satisfactory as a conservation tool. These two scenarios in part demonstrate that with the application of strategic management, photographic libraries operating within the public and charitable sectors are able to compete with those operating commercially.

The growth in the economic exploitation of digital technologies and the expansion of the photographic libraries has to some extent been symbiotic. By adopting ICT's, for instance, many publications have been able to turn

their photographic libraries into profitable businesses. Partly through the utilisation of ISDN links, in 1996 the *Financial Times* reorganised its picture syndication to capitalise on its extensive picture library (*Press Gazette* January 24, 1997). Lyon has reiterated that the trend to exploit digital technologies has occurred with the realisation of the possibilities associated with the economic exploitation of the material conveyed.

> The technology-led capacity to supply huge amounts of information in digital form has coincided with the discovery that such information often has a high market value. In other words, data can command a high price as a commodity.
>
> (Lyon 1992: 42)

The evolution of digital technologies has, in recent years, enabled hitherto separate media to converge, creating new businesses ready to exploit the market value of the information conveyed. Through the exploitation of enhanced digital techniques, in the winter of 1996 WTN Pictures, a subsidiary of the television news agency WTN, began digitising still images taken from television news footage, selling these "news photographs" to newspapers and other lucrative markets. WTN Pictures thus began competing with other news agencies, such as Reuters and AP, both of which, ironically, set up television divisions to compete with WTN (*Press Gazette* January 24, 1997). The convergence of technologies has resulted in the increased economic exploitation of other sectors of the photographic industry. In April 1997 an American company, Beauty Bytes, announced that it had "created the worlds first studio on the web" (*British Journal of Photography* April 30, 1997). Prospective clients were invited to ascertain the physical attributes of the Beauty Bytes models by first viewing them on the World Wide Web. If satisfied with the model and backdrop viewed on-line, companies could have their products shipped to the Beauty Bytes studio where they were photographed with the chosen model against

the selected backdrop.

Technology and profit

Whilst the appropriation of ICT's for commercial benefit does in some ways demonstrate a high degree of ingenuity and creativity, Dovey reflects that unless such technologies are exploited by public organisations, the needs of the private sector will dominate.

> In the absence of either constructive critical debate or patterns of political organisation these new forms (of media) will be given over to the forces of the market and the needs of multinational capital. By default they will simply be part of the profit production process at the expense of some of the democratic, creative, and educational possibilities that they undoubtedly do possess.
>
> (Dovey 1996: 9)

Indeed, it could be argued that precisely because of the democratic, creative and educational possibilities associated with the content of many photographic archives in the public sector, some of the imbalances caused as a result of the actions of multinational capital and market forces can begin to be addressed. Johnson underlines Dovey's argument, suggesting that such activities will only occur where the media is regulated

> ...in the absence of regulation and public control, market-based systems tend to create barriers to market entry, monopoly and restrictions on choice, while shifting the definition of information from that of a common good to a private commodity.
>
> (Johnson 1996: 83)

As Sardar suggests, it is perhaps ironic that the possibilities associated with ICT's for "creative and democratic" exploitation and "profit production processes" have come about as a direct consequence of the evolution of technology that was initially confined to the (egalitarian?) ideals of academia.

> (Only) academics and researchers enjoyed the privileges of the Net; and they shaped it, as a social instrument, around their own needs and lifestyles ... It is interesting to speculate whether the Net would have grown, or even survived, if at the moment of its creation it had been thrown into the hard world of the marketplace, where 'survival of the fittest' rather than 'mutual aid' is the motif.
>
> (Sardar 1996: 3)

In 1997 the main photographic corporations came together in an initiative to agree standards and to jointly develop digital imaging technology. The Digital Imaging Group (DIG) represents a coalition of manufacturers, each eager to compete most effectively in the digital photographic market: Kodak, Microsoft, Hewlett-Packard, Adobe, Canon, Fuji, IBM, Intel and Live Pictures. Whilst the economic potential associated with digital imaging and photography has clearly motivated the manufacturers of both hardware and software, those keen to exploit the services that such technology can facilitate are also positioning themselves to enhance sales and profitability - not least in the photographic library industry. In at least one instance a manufacturer is also emerging to become a powerful (and profitable) service provider.

In recent years the Microsoft Corporation has manoeuvred to become dominant in the photographic library sector. In one of many moves designed to offset the commercial gain its competitors (including Getty Communications, who in October 1997 acquired PhotoDisc, the biggest supplier of royalty free images, as part of a $160m deal), in February 1998

Microsoft, through its wholly owned subsidiary Corbis, opened its first on-line stock photography outlet. Launched in the United Kingdom in October 1995, Corbis has acquired the reproduction rights to at least 20 million images from over 450 sources world wide. Institutions on Corbis' client database included the Vatican Museum, the Louvre, The National Gallery, London, the Guangzhou Municipal Museum in China, the National Archaeological Museum of Greece, the Museo Capitolino in Rome, the National History Museum in Vienna, the National Museum, Copenhagen, the Hulton-Deutch Picture Library, the Bettman Picture library, the Ansel Adams Picture Library and the Museum of Flight in Seattle. Representatives of libraries and museums require a clear understanding of publication and copyright laws if they are to benefit from entering into agreements with companies such as Corbis. The long term implications of losing reproduction rights could prove costly.

Although to date the expansion in the use of on-line communications systems has relied on a physical network being in place, in the foreseeable future this scenario is likely to change. Increasingly reliance will be placed on the use of (wireless) satellite technology. Of particular concern to the custodians of archival material is that one of the key players investing in the satellite infrastructure which is set to dominate global telecommunications is Microsoft. Teledesic, part owned by Microsoft, with partners Boeing and McDonnell Douglas, had invested $9 billion to provide 324 satellites (including 36 spares in geo-stationary orbit) by the year 2002. In a separate initiative, Iridium, owned by Motorola with a consortium of partners, invested $5 billion to provide 66 satellites. Although these plans ran into difficulties in the late 1990's, if such efforts should come to fruition one consortium could conceivably be in a position whereby it not only dominates the software industry, but also *the market which controls the material viewed* (using its software) *and* the means by which the material is *transmitted*. Whilst Fopp

cautiously welcomes the advantages associated with the possibilities afforded by these technological advances, he acknowledges that if one company controls both the reproduction rights *and* the methods of viewing and transmitting material, the implications for custodians of archival material could be profound.

> If only one of (these) projects succeeds it will have won the information war, for it will own the infrastructure which will provide global communications of a type hitherto unheard of. But what do these advances in technology mean for museums and galleries? For the first time our collections are capable of being examined, enjoyed and exploited remotely. A visit to a fixed site, or receipt of a postal response to a specific enquiry, will no longer be necessary.
>
> (Fopp 1997: 83)

The increased use of digital technologies by those producing and disseminating photographic material can in part be measured by the impact such technologies are having on traditional methods of photographic production. Whilst the digital photography market has expanded considerably, surprisingly the demand for silver based photography products appears to remain unabated. Indeed, in 1997 the use of silver for the photographic industry rose by 3% world wide. A number of reasons have been cited for this growth, including an increase in demand for colour films in expanding markets in regions such as China and India, more use of x ray films and an increased consumption of motion picture film. However, despite an 11% increase in demand for colour film in 1996, materials manufacturers have nevertheless seen falls in their overall profits. In the second quarter of 1997 Kodak experienced a profit fall of 14% for example. This loss could partially be attributed to the aggressive marketing techniques of one its main competitors, Fuji. (In the summer of 1997 the World Trade

Organisation investigated a dispute between Kodak and Fuji concerning alleged trade barriers, which were apparently preventing Kodak from dealing effectively in Japan.) Whilst its losses were compounded by a strong US dollar, Kodak also attributed the poor performance of its digital division in contributing to its overall fall in profits. In 1997 the company's diminishing market share led to cuts and job losses, although Kodak continued to invest heavily in its digital research and manufacturing programme.

Although the use of digital photography technology has yet to reach the levels anticipated by manufacturers, in future years it is likely that the use of such technology will become increasingly attractive to both amateur and professional markets. At the same time it is expected that the cost of silver based products will rise. Silver prices rose by about 60% in the latter half of 1997, partly due to the activities of an American billionaire. During the autumn of 1997 Warren Buffett purchased 20% of the world's estimated annual silver production, which subsequently pushed the price of silver up to a nine and a half year high at $7.025 an ounce. Clearly major photographic manufacturers are susceptible to wider economic forces that influence their market share.

Digital v silver photography

The overall status regarding the use of digital technology in relation to silver based photography appears to be confusing and contradictory. Global sales of silver based products have in the past risen, as have the costs of the raw materials of such products. Although the costs of silver products have increased, digital products have yet to be sold in the numbers envisaged, despite aggressive marketing. The main manufacturers have addressed both the amateur and professional markets in their efforts to increase sales of

digital products. In 1997 Kodak launched its (amateur based) Internet Print Service (KIPS). Using the Internet, customers employing KIPS could transfer image files from digital cameras direct to Kodak, who aimed to mail the processed prints within 48 hours. At about the same time Fuji introduced a similar system in Europe, through its Photex subsidiary in Germany. Whilst these developments have been aimed specifically at the amateur market, the professional photography sector has also been targeted by the leading photographic manufacturers. In February 1998 Kodak introduced its DCS 520 camera, which at a cost of around £10,000, was aimed at professional photographers - photojournalists in particular. Developed collaboratively with Canon, the system is based on the Canon EOS system, making the hardware compatible with the large selection of EOS lenses and accessories already available. The camera was developed by the same team of Kodak scientists and engineers that provided the sensor technology used on the Pathfinder mission to Mars.

Equipment comparable to the Kodak DCS 520 camera is employed by the staff photographers at the *Birmingham Post and Mail*. In January 1998 this became the first regional newspaper in Britain to adopt digital technology for the entire processes involved in image capture and reproduction. The company ceased using all silver based techniques, closing down the darkrooms and processing areas. The *Post and Mail* had been testing digital photography technologies since 1996 and in that time used a significant number of news pictures which would otherwise either have been missed altogether or gone into later editions. In addition, at the time of this development managers believed that as a direct result the newspaper would save around £40,000 a year on film and processing cost. In a similar initiative, in 1996 the United Provincial Newspaper group introduced systems designed to centralise its subbing and picture operation in a £20m restructuring of its newspaper operations. At the same time the group invested £500,000 in

digital technology in order to consolidate its photographic services. The implications of such photojournalistic trends are significant.

> Are press photographers to be reduced to little more than fleshy bipods - mobile supporters for image capture devices that send streams of pictures back to an editor's desk, where the crucial selection and framing decisions are made?
>
> (Mitchell 1994: 55)

In an effort to maximise profitability and to reach prospective customers the manufacturers of digital photography products have used an array of marketing techniques to increase the sales of their products. Eager to benefit from the global publicity associated with the event, Kodak and Canon launched the DCS 520 at the winter Olympics in Nagano, a strategy that was reminiscent of the launch of the Hi-Vision video format at the Seoul summer Olympics in 1988. In a similar, albeit much smaller, initiative in 1998 Canon provided around £1m of sponsorship to the Year of Photography and Electronic Imaging. The event was perceived by the company as "the perfect stage to raise its profile and promote its products, especially on the digital imaging side" (*British Journal of Photography* June 11 1997).

Although sales of digital products have failed to reach the levels expected, it is clear that the trend towards the increased adoption of such technologies, by both amateur and professional photographers, remains unabated. Between 1996 and 1997 over 100 electronic still cameras (manufactured by 30 companies) were introduced in the US alone, contributing to an anticipated North American market worth around $1bn by 2002 - with 3,000,000 units expected to be sold annually. Globally the share of the market of digital cameras is expected to grow sevenfold by 2002. In Britain the relatively healthy position of this market was demonstrated when, in January 1998, the ownership of the photographic materials manufacturer

and supplier, Ilford, was transferred from International Paper to Doughty Hanson. Promising not to make any redundancies, at the time representatives for Hanson suggested that they were keen to add Ilford to their portfolio of companies as they had been particularly impressed by the company's involvement in digital imaging markets.

2.9 Conclusion

This chapter has set out to demonstrate that photographic librarians and archivists face a number of immediate and challenging issues when considering the use of computer related technologies. The possible adoption of such technologies can have a significant impact on the economic exploitation of photographic material, in addition to the related issues pertaining to preservation and dissemination. A particularly complex issue is copyright. This question is inextricably linked to the fiscal exploitation of image collections and archives. Whatever rights to reproduce images and derivative works from them are established, questions of what these rights are worth and how they can be transferred remain.

Whilst this chapter has illustrated that the custodians of historical and contemporary photographic material operating in the public sector face a number of significant problems, it could be argued that those working with photographic material in the commercial environment of stock libraries and archives, although subject to competition, are, nevertheless, free of the constraints unique to the political and economic context of local government, dominated by fiscal restraint and accountability. Although the private and public sectors face separate issues and problems relating to the adoption of ICT's, the boundaries between the sectors are by no means distinct, with

private corporations eager to exploit collections held within the public domain for their own commercial advantage.

Citing the dominance of Corbis, Fopp reiterates some of the dangers associated when hitherto public material becomes appropriated by corporations who not only own the rights to its use, but also control the technology to access it.

> The fact that the commercial sector (rather than museums) ... in one way or another, controls the pace of the technology creating the new digital information age, may mean that the digital images taken by their companies could prove to be (forever thereafter) the best images in a digital form available. This means that even the original copyright owner (the museum from which the image is derived) may not be able to 'catch up' on the technology being used by a company associated with the inventors of any subsequent technology. In other words, if the best available image is on the Corbis (or an other commercial picture library) database, it is highly likely that museums and galleries will not have their material accessed as often by commercial sources who will have a preference for the higher quality obtained from the commercial sector.
>
> (Fopp 1997: 87)

As this chapter has highlighted, issues relating to quality and access associated with the control of photographic images residing with a handful of powerful media corporations are further compounded by the global nature of both the markets and the technology employed. Whilst to date the existing telecommunications infrastructure has been appropriated to enable the global growth in the use of telematics to "piggy back" on the old analogue technology of copper telephone wires, digital systems, (employing satellites and microwaves) are already operative, enhancing further the dominance of global media corporations. Kinney believes that the use of global systems will lead to continued transnational integration, along with a greater reliance

on existing and future communications infrastructures.

> British Airways used the information superhighway to relocate its worldwide reservation service to India in order to take advantage of cheap labour and, in the near future, Africa will be used as a base for surveillance systems for US malls, thus hard-wiring cheap labour to the information superhighway. What is this if not simultaneous decentralisation and integration? In a similar fashion, a junior executive who telecommutes from home is less beholden to the geographical location of corporate headquarters, but he is all the more dependent on the network of technology and information that underpins the process.
>
> (Kinney 1996: 147)

Whilst it is clear that as a result of the adoption of ICT's the twin forces of decentralisation and integration are continuing to occur at a rapid pace, it would appear that some of the advantages of this process may, infact, actually undermine the advantages enjoyed by the dominant players in this field. Promotional literature for the Telegraph Colour Library - a commercial photographic library based on the collections of the *The Telegraph* newspaper - states that the content of the library is "...unlike many of its competitors, British based, reflecting the tastes and styles appropriate to the UK market."[13] This raises the question of whether the globalisation of visual culture can ever occur - marketing photographs is not like selling cola. This in turn could lead to a dilemma for photographic archivists operating in the public sector. They may feel that if their collections cannot be sold to global markets their collections will therefore remain safe and intact. On the other hand, if people elsewhere in the world are not interested in their material, some of which may be uniquely parochial (as is the case in Birmingham) why use digital technologies to reach new users and audiences? Of course the use of ICT's would allow for specialist research and curatorial activities to occur,

13 *The Telegraph Colour Library* promotional leaflet. No date.

but perhaps these advantages are disproportionate to the cost and effort of introducing such systems. Furthermore, as Slater suggests, whilst organisations such as public libraries may seek to exploit ICTs' in order to investigate new markets, they are likely to be disadvantaged (compared with parts of the private sector) for want of resources.

> (Notions) like flexibilisation, disagregation and market segmentation do not imply that capitalism is getting smaller or cosier. Even the capacity to target markets may depend on industrial and marketing technologies capable of operating on a global scale.
>
> (Slater 1997: 192)

The evolution and appropriation of digital technologies is rooted firmly in the desire by powerful and dominant multi-national corporations to market new machines, to sell more software. Although it would be difficult to provide tangible empirical evidence to sustain the notion, it would nevertheless be interesting to establish just how many more computers were sold, and how many more agreements with Internet service providers signed, as a direct result of the media preoccupation with technology that occurred during events such as the Pathfinder Mission and the death of the Princess of Wales. Not only were these events deemed newsworthy - so, too, was the use of the technology that enabled individuals to view images beamed directly from Mars and to sign a virtual condolence book.

The growth in the use of digital technologies cited demonstrate that custodians of photographic material working in institutions such as libraries and museums have been influenced by the marketing techniques of multi-national corporations. They continue to act as consumers, eager to buy into the technology that will seemingly allow their job to become easier, whilst concurrently affording possibilities of working with new "user-audiences."

Davies recommends caution when considering some of the claims made of these technologies, cynically dismissing the advantages cheerily advocated by those responsible for marketing (problem solving) hardware and software.

> There are at least two ways of viewing the new relationship between humans and technology. We are certainly encouraged intellectually and culturally to see it as positive and necessary. The architects of modern computer systems have successfully argued that their technology can solve the ancient curses of social dysfunction and administrative expense. Bureaucracy, they claim, can be made more efficient through the automated management of information. Society can be made safer. Economies can run more smoothly and education can be conducted more effectively. Cities can be made safer. Some of these claims are valid, but most are well orchestrated lies or illusions. The marketing of a modern super computer has a surprising amount in common with the tactics of a door-to-door vacuum cleaner salesman, and in may cases has about the same level of credibility. A study by the Congressional Office of Technology Assessment in the US found that computer systems, once implemented, often result in unforeseen costs, unfulfilled promises and disillusionment.
>
> (Davies 1996: 33)

In the immediate future at least, those in the public sector might do well to take note of Davies' views, if only to protect their own long term interests. "Why should museums and galleries save staff time by computerising when those savings may well be clawed back by the grant givers that subsidise them?" (Fopp 1997: 87).

Despite the caution advocated by some, the adoption of digital technologies by those working with photographic images now looks unstoppable. Although the increasing use of this technology looks set to continue the trend of "transnational integration," equally, on a "local level,"

such technologies are being employed to increase profitability and rather dubiously, efficiency. A London customer reporting a fault to his or her electricity supply is connected to a telephonist in Sunderland. It is extremely unlikely that the telephonist will have any knowledge about the callers neighbourhood, let alone address. When in March 1997 thick fog caused over 160 vehicles to crash on the M42 in Worcestershire the emergency services were directed to the scene by an operator who took the first call about the *impending* series of accidents. The operator was 400 miles away - in Inverness. It is not known if the emergency services would have gained a few vital seconds (and a number of lives not devastated) if the operator had some local knowledge about a stretch of motorway notorious for fog and poor visibility.

In the United Kingdom, the number of people employed by telephone service centres now exceeds those employed in the car manufacturing and coal industries combined. The same digital technology used in these so called "white collar factories" - which has in recent years become the fastest expanding industry in Britain - will, fiscal and managerial decisions notwithstanding, become increasingly available to photographic librarians and archivists operating in the public library sector. As Slater suggests, these professionals could exploit the technologies and methodologies of service industries in order to manage (and market) material in their custody.

> (Much) consumption comprises such things as information, advice and expertise, leisure events and activities, entertainment. Much of this testifies to the fact that more of the social world, including social relations and expression, can be made in the form of a saleable commodity for consumption.
>
> (Slater 1997: 193)

Whilst of course the photographic professions can achieve tangible benefits

from the appropriation of information communication technologies, Lash and Urry advocate caution.

> The dematerialisation of things has a profound impact on the way they circulate and enter everyday life as consumer goods ... there is an enormous speed up in the circulation of capital and consumption in all their phases. Turn over times, re-investment and capital deployment, rates of innovation and obsolescence of both producer and consumer goods, style changes - all reach hysterical velocities.
>
> (Lash and Urry 1987: 16)

As this thesis goes on to consider, if those within the public library service responsible for ICTs employ such technologies creatively and appropriately, historical photographic material may be disseminated, (perhaps even affording new opportunities for "financial innovation,") whilst at the same time new capabilities to work with disparate, possibly otherwise disadvantaged, members of local communities may be provided. Furthermore, those working within the institution of the public library service may be able to exploit technology in order to provide unique and valuable interpretations of the material contained within their collections. The material that follows considers possible implications for photographic archivists and curators when using digital photography technologies. This material is informed by a number of case studies, including projects undertaken by Birmingham Library Services. These case studies are cited in order to provide empirical evidence relating to the issues confronting the staff at Birmingham who, in the recent years, have sought to introduce digital technologies to facilitate aspects of their work with the photographic collections housed within the Central Library. The remainder of the thesis provides an overview of the theoretical and academic work relating to the research, in addition to examining the broader context in which information

technology might be employed by public libraries as part of wider, national (and international) initiatives.

Summation

In summary this chapter has outlined the following points:

- Digital technologies are not new and are continually evolving, having emerged in part through altruism and a "hobby" ethos.
- Home computers have contributed to the trends leading to the "privatisation" of leisure.
- (Computer) technologies have in part evolved as a result of "unpredictable" use by "non-predicted" users.
- The preservation role of information communication technologies is limited: original artefacts are not necessarily protected as a result of their use.
- To date predominantly Western users have controlled the use of digital resources within archival institutions.
- The use of information communication technologies can lead to the "homogenisation" of resources and vital non visual information can be lost.
- Many (computer) technologies soon become out of date.
- The use of information communication technologies can lead to the loss of reproduction rights.
- The use of information technologies can inhibit the fostering of trust between facilitators and groups within communities.

The substantive implications of these points I believe are as follows:

- Where so used, the preservation role of information communication technologies does little to foster "association and intimacy" and this should be recognised by library professionals.
- Library and archival professionals need to recognise that the use of information communication technologies can lead to the "homogenisation" of visual resources.
- When procuring digital resources buyers must recognise and make provision for the limited life expectancy and usage of such technologies.
- Institutions such as libraries within the public sector can offset some of the trends associated with the commercial targeting of "private" technology users.
- Professionals working in such institutions as libraries and archives must ensure that such institutions do not lose valuable revenues due to the loss of reproduction rights caused by the use of information communication technologies.
- Library professionals must accept that some users will be sceptical and wary about the use of information communication technologies.

CHAPTER THREE

PHOTOGRAPHY AT BIRMINGHAM CENTRAL LIBRARY

3.1 Introduction

This chapter provides a context for the distinctive elements of the research by describing aspects of the history of the photography collections at the Birmingham Central Library. Although it would be both impractical and inappropriate to describe each of the components that make up the extensive archive at the Library, this chapter does provide an insight into the range of material held within the collections.

The chapter goes on to examine the various strategies I devised and the resources I employed in the course of the research in order to consider the utilisation of information communication technologies by the Birmingham Library Services.

Describing the British Library's *Initiative for Access Programme*, Alexander and Prescott provide a reminder that an enthusiasm for new technology amongst librarians is nothing new.

> The introduction of light into the British Museum Reading Room could be seen as the first great initiative for access. The lighting scheme was the brainchild of Edward Augustus Bond, who was Keeper of Manuscripts from 1866 to 1878 and Principal Librarian from 1878 to 1888 ... (Bond) was a pioneer in the production of photographic facsimiles of manuscripts, establishing the Palaeographical Society, which produced a huge 'databank' of photographic images of manuscripts from many different collections. He introduced photographs into the exhibition displays in order both to reduce wear and tear on original artefacts and to allow visitors to see different pages of the volumes on display.
>
> (Alexander and Prescott 1998: 16)

The considerations pertaining to the creation of digital facsimiles of photographs described in this chapter - in order to realise objectives comparable to Bond's - relate closely to the details of the empirical work described in the fourth chapter, and the fifth chapter, which represents the focus for the various elements of the research.

The material describing the photography collections held by the BLS has been informed by the research undertaken by the Head of Photography at the Birmingham Central Library, Peter James. As part of the *Coming to Light* project - described in detail in Chapter Four - James set out to examine the history of Birmingham Library Service's photographic collections. This research culminated in the publication of the catalogue which accompanied the *Coming to Light* exhibition at the Birmingham Museum and Art Gallery in the autumn of 1998. Although making a modest contribution to the realisation of the *Coming to Light* catalogue, the author nevertheless acknowledges the assistance that its publication gave in facilitating the compilation of the material which follows.

3.2 Photography and the Birmingham Library Service: An Overview

The history of the photographic collections owned and maintained by the Birmingham Library Service is not a clear one. Acquisitions have not always been methodically recorded and where they have, these records have themselves sometimes been lost or destroyed.[1] Indeed, it was not until as recently as 1975 that the relocation to the present Central Library building led

1 In *Coming to Light: Birmingham's Photographic Collections* James writes: "An ongoing research project suggests that whilst books illustrated with photographs and photo-mechanical reproductions were present in moderate numbers after 1885... the major print collections did not arrive in Birmingham Library until the late nineteenth and early twentieth century". Furthermore, James cites a fire in 1879 which destroyed all but 1,000 of the 50,000 items in the Reference Library: "All records of the Library's stock seem to have been lost and with them details of any photographs which may have been collected to date." (James 1998: 26 - 27)

to the discovery of a significant number of photographic works. When conducting an audit of the old library staff came across a range of material, including work by Fenton documenting the Crimean War, 11 volumes of Edweard Muybridge's *Animal Locomotion* photographs dating from 1872 and four volumes of Frith's 1863 work recording Egypt and the Holy Land.[2] With over two million artefacts it is likely that the archive contains important works that remain undetected to this day.

In addition to establishing the existence of significant historical material, the relocation to the present library building in the mid seventies provided the BLS with an opportunity to reorganise its photographic collections. The Early and Fine Printing Collection was established as a result of considering material requiring specialist care and attention. The main protagonist behind this initiative, Philip Allen, also used this time as an opportunity to strengthen the photographic content of the new Library's History and Geography Department.[3] In 1984 Allen supplemented the collections by organising the purchase of the Francis Bedford Collection, which consists of over 2,000 negatives and the same number of prints. The following year Allen developed the collections further by presiding over the acquisition of The Francis Frith Negative Archive.

Acquired for £390,000 with funds made available by the National Heritage Memorial Fund, the National Art Collections Fund, the Victoria and Albert Purchase Fund and the Friends of the National Libraries, the Francis Frith Negative Archive collection comprises of 310,000 negatives and 4000 prints. Significantly, at the time of the sale, the previous owner of the material, John Buck, who operates The Francis Frith Collection Company, retained the exclusive commercial and marketing rights to the works for a

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2 In addition to the material discovered in the mid seventies, in 1995 James found a number of original negatives produced for the Bournville Village Trust during the forties by Bill Brandt.

3 In the early 1990's the History and Geography Department merged with the Local Studies Department to form the Local Studies and History Department.

period of twenty years. Buck has subsequently gone on to use a variety of marketing techniques (including the use of both on-line and off-line digital media) to exploit the commercial value of the Frith collections. At the time of the acquisition the BLS was granted the right to provide access to the materials in its custody "to bona fide researchers" (Hallett 1985: 1394). After adding additional work by Robertson and Beato, Samuel Bourne, John Thomson and George Washington Wilson, the Library's importance as a photographic repository was underlined when, in 1987, it became one of the eleven members of the Committee of National Photographic Collections (CNPC).[4]

Birmingham Museums and Art Gallery

The history of Birmingham Library Services involvement with photography is yoked to that of the City's Museums and Art Gallery. Incomplete or missing evidence notwithstanding, the history of the photographic collections currently residing within the Central Library can be traced back to 1866 and the opening of the first Free Library in Birmingham. The initial plans for the Birmingham Corporation's first Free Library included provision for either an art gallery or a museum space. These plans were realised a year after opening when a room was made available within the Library in order for exhibitions to take place (Muirhead 1911: 447). Soon after an Art Gallery Sub Committee was established in order to examine the viability of founding a permanent Industrial Art Gallery within Birmingham. Influenced by the success of the modest provision made within the Free Library, in the early 1870's the local glass manufacturer and wealthy philanthropist Thomas Clarkson Osler launched a fund to create a Public

4 Established in 1987 the eleven members of the CNPC are Birmingham Central Library, the British Film Institute, the Imperial War Museum, the National Buildings Record, the National Library of Wales, the National Museum of Photography, Film and Television, the National Portrait Gallery, the Public Record Office, the Royal Photographic Society, the Scottish Photography Archive and the Victoria and Albert Museum. (HAWARTH-BOOTH 1993).

Picture Gallery within Birmingham. Momentum for a gallery culminated with a donation of £5000 for the acquisition of works of art. Aware of the disadvantages faced by the artisan classes within Birmingham, particularly when compared with their counterparts on mainland Europe, the Tangye brothers made their donation contingent on the Corporation agreeing to build a permanent Art Gallery. The Corporation accepted the offer and building work commenced in 1878 (James 1998: 27).

Although the establishment of the Art Gallery had provided Birmingham with a permanent venue for the exhibition and display of all forms of art, the absence of a dedicated gallery had not discouraged those with an interest in promoting photography during its earliest years. In 1857 the Hen and Chickens Hotel in New Street hosted the *First Annual Exhibition of Photographs and Stereoscopes and Apparatus*. Organised by the Birmingham Photographic Society, contributors to the exhibition included James Robertson, Francis Bedford, Horatio Ross, Hill and Adamson, George Shaw, Henry Peach Robinson, W R Sedgefield and O S Rejlander (BPS 1857).[5] Prior to this exhibition it is believed that the public exhibition of photographs in Birmingham had been limited to industrial and scientific exhibitions and the window displays of commercial photographers (James 1998: 24). A small number of touring photography exhibitions had also come to Birmingham, including that mounted in 1855 in the rooms of the Birmingham Society of Arts by the South Kensington Museum (Hawarth-Booth 1997: 35).

Acquisitions

One of the first acquisitions to be made by the newly established Free Library was a collection of images made by the Birmingham photographer,

5 The first Birmingham Photographic Society had been formed in 1856. The Society was wound up eight years later following a financial loss. George Shaw, O S Rejlander and H P Robinson were themselves members of the society.

James Burgoyne. A professional photographer based in Small Heath, Burgoyne had been commissioned by the newly established Birmingham Archeological Society to record the shops, streets and slum buildings which were being demolished in order to rebuild the New Street and Corporation Street areas. The images subsequently presented to the Free Library comprised around one hundred large format albumen prints produced between 1870 and 1875. The projects documented by Burgoyne were typical of the building works undertaken in the latter part of the nineteenth century, notable as a period of extensive municipal reform. Joseph Chamberlain's programme for urban renewal in Birmingham was mirrored in a number of other European cities; it is known that in Glasgow, London and Paris, the works were preceded by photographic surveys undertaken in order to record aspects of the architecture that was to be destroyed (James 1998: 28).

An important proponent of the practice of photographing aspects of the local architecture and topography at this time was William Jerome Harrison. The results of Harrison's efforts now form a significant part of the photographic archive within the Birmingham Central Library. After his election as Vice President of the Birmingham Photographic Society in the mid 1880's, Harrison proposed a photographic survey of Warwickshire. A regular contributor to the newly launched *Amateur Photographer*, Harrison enlisted the support of an eminent industrialist and collector of photographic ephemera, John Benjamin Stone (Roberts 1985: 34). During 1892 the initial results of the Warwickshire Photographic Survey were exhibited at the Birmingham Museum and Art Gallery. The six hundred images were subsequently placed within the Central Reference Library under the auspices of the Free Libraries Committee. Members of the Birmingham Photographic Society continued to contribute to the Warwickshire Photographic Survey well into the 1950's. As noted in **Chapter One** a substantial archive of work held within the Local Studies and History Department of the Central Library

now exists as a result.

The ties between Harrison and Stone were to have a considerable impact on the photographic collections at the Birmingham Central Library. An enthusiastic exponent of the medium, Stone did much to promote photography both within the midlands region and beyond. The significance of his efforts are perhaps best illustrated by the range of material bequeathed to the Birmingham Reference Library following his death in 1914. In 1921 the Library took custody of Stone's collection of 22,000 photographs, 600 stereographs, 2,500 lantern slides, 14,000 glass negatives, 50 albums of collected prints and 50 albums of press cuttings.

With their shared heritage dating back to the latter part of the nineteenth century it is clear that the ties between the Birmingham Library Service and Birmingham Museums and Art Gallery are close. The importance of the two institutions was recognised by Charles Whitworth Wallis, who had been appointed as the first Keeper at Birmingham Museum and Art Gallery in 1884.

> The intimate connexion of Free Libraries and Museums in their aims and the uses they perform in the education and culture of the people, must be apparent to all who take the trouble to consider their functions from the standpoint of a general principle in relation to the elevation of the masses. In the one case - that of the free Library - the mind in its wider functions is appealed to; in the other - that of the Museum - the eye is the organ through which the perception of beauty and of proportion, and, one might say, the fitness of things, are conveyed to the mind.
>
> (Whitworth Wallis 1888: 6)

Whitworth Wallis' notion that libraries and museums shared a symbiotic relationship was, he felt, particularly pertinent to Birmingham.

> In a case like Birmingham this is particularly the case, for the books on art and art workmanship, are as a rule beyond the reach of the ordinary workman, and his appetite having been whetted by a slight description of some object or process in the Museum, he must of necessity have recourse to the library to acquire further knowledge.
>
> (Whitworth Wallis 1888: 9)

Whitworth Wallis' comments highlighting the importance of the close links between libraries and museums were made during a time of considerable industrial expansion. The "ordinary workmen" resident within Birmingham were engaged by various employers, in a diverse range of industries. Significantly, during the latter part of the nineteenth century Birmingham became an important photographic manufacturing base, providing employment for many.[6] The introduction and marketing of Eastman's products in the 1880's no doubt contributed to the success of a number of Birmingham based companies which designed and manufactured a range of camera and darkroom equipment. In 1896 the Birmingham company Lancaster and Sons felt confident enough to promote itself as "The Largest Manufacturer of Photographic Apparatus in the World." Marketing hyperbole aside it is clear that by the turn of the century Birmingham manufacturers had developed a number of successful photographic products. R Field and Company manufactured metering apparatus, whilst acetylene installations for use during portraiture photography were produced by R J Moss. The Birmingham Collodion Company produced Criterion Printing-Out-Paper, whilst Barton's produced a range of photographic mounts and frames.[7]

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6 James recalls that Birmingham's important position in British photography was demonstrated by an edition of *The Photogram* in May 1900 and again in 1911 with an edition of *Photography and Focus*. (James 1998: 36)

7 Notes on the Industrial Side of Photography in Birmingham. *The Photogram*. Vol 7.No 77. May 1900.

In addition to the establishment of companies manufacturing photographic products, businesses in Birmingham soon began to use photography to promote their own products and services. In the early 1920's Metropolitan-Cammell employed the services of professional photographers, whilst both the Cadbury Brothers and Avery's set up their own in-house photography departments, a trend followed during the post war years by Austin, BSA, Dunlop, GEC and Lucas. Some of the photographic material produced by these companies has since been acquired by the Birmingham Library Service, allowing the archive to reflect the important manufacturing centre in which it is placed.

Library and museum tensions

Despite the importance of Birmingham as a centre holding important photographic collections, those responsible for the Libraries and Museums Services within the city have not always been sympathetic to the medium. At the turn of the century the so called Birmingham Pictorial School played an important part in the development of Photographic Pictorialism. A leading exponent of the gum bichromate process, J C Batkin, did much to contribute to the distinguished international reputation enjoyed by the School. Despite their success the work produced by Batkin and his contemporaries was not recognised by either the Library or the Museums Service. James states that

> From the Library's perspective the very fact that Pictorialism was deemed to be 'art' and not 'information' placed it outside the realms of its collecting policy.
>
> (James 1998: 36)

In the Museum, on the other hand,

> Collections were being built upon the acquisition of historical European and, to a lesser degree, contemporary Fine Art. With a heavy dependence on donations and few public resources to speak of, photography in general did not register as serious or prestigious enough to collect.
>
> (Sidey 1995: 64)

Whilst it is possible that Birmingham Library Services extensive photographic collections have been strengthened as a consequence of the reticence of the Museums Service in recognising the importance of the medium, the (in)actions of those responsible should perhaps be considered in the context of the wider debate concerning photograph's role as an art medium. More recently similar notions about the validity of colour photography meant that it did not constitute any significant facet of the Library's collections until the early 1990's.

Recent Developments

In 1992 the Library hosted *Birmingham Insights*, an exhibition of work by members of Wide Angle, a community photography project funded jointly by West Midlands Arts (the local Regional Arts Board) and the Economic Development Department of Birmingham City Council. Subsequently acquired by the Library, the exhibition represented one of the first bodies of work to include a substantial colour component. In recent years the Library has also acquired colour work by the photojournalist Nigel

Dickinson and commissioned exhibitions by, amongst others, Matthew Murray (*Heartlands People*, 1997) and Phil Lea (*People Like US: the Irish Community in Birmingham*, 1997).

The *Birmingham Insights* exhibition was also significant in being the last to be held in the Library Exhibition Hall prior to its closure in 1992. Opened for just seven years, the Hall's inaugural exhibition - *Francis Frith's High Days and Holidays: A Photographic Extravaganza of the Victorian Era* - coincided with the Library's acquisition of the photographer's work. After the space was converted into offices Birmingham lost another venue for the promotion of photography. Indeed, despite its importance as a photographic centre, Birmingham has had no dedicated photography venue since the closure of the Triangle Gallery in 1987.

The close, mutually supportive link forged between the Library Service in Birmingham and Wide Angle is typical of the types of partnerships made by the staff at the Central Library and photography organisations in the midlands region - particularly those in the voluntary sector. Established to encourage wider participation in photography, these organisations included WELD (Westminster Endeavour for Liaison and Development), Trinity Arts (the precursor to Wide Angle and later the Birmingham Centre for Media Arts, now Vivid), SPAM (Saltley Print and Media Workshop) and Buildings Sights, later to become Photopack. Such organisations have facilitated the work of a range of practitioners, including photographers reflecting Birmingham's cultural diversity. In the 1990's the Library supported the work of a number of local photographers by establishing commissions and exhibition projects which aimed to augment the existing collections. At this time the BLS placed particular emphasis on the work of local contemporary photographers drawn from Birmingham's ethnic communities.[8] In order to

8 Photographers now represented in the Library's collections include Vanley Burke, David A Bailey, Maxine Walker, Claudette Homes and Peter Max Kandola.

realise these objectives, in the 1980's and 90's the Library's engagement with photography was itself supported by working collaboratively with West Midlands Arts. The Library participated in a number of schemes operated by the RAB, including the Visual Arts Bursary, the New Work and Productions Scheme, the Local Authority Agreement Scheme and the Promoters and Presenters Scheme.

Photography at the Central Library

The photographic material within the Birmingham Central Library is located on five floors within the seven storey building. On the seventh floor, the City Archives house the Birmingham Photography Society Archive, the Boulton and Watt Archive (which includes some rare photographic works by Robert Howlett), the Bournville Village Trust Archive (including material produced by Bill Brandt), the BSA Archive, the Cadbury Archive and the Metro-Cammell Archive. Positioned on the sixth floor, the Local Studies and History Department hold collections containing work by William Smedley Aston, Francis Bedford, Francis Frith, William Jerome Harrison and Sir Benjamin Stone. The Warwickshire Photographic Society Collection can also be found within this Department, along with the Birmingham Corporation/City Council Department Collection and recently commissioned work including material produced by Claudette Holmes and Richard Saddler. On the fifth floor, the Science, Technology and Management Section of the Central Library includes a number of photographic books and periodicals embracing a wide range of subjects including bibliographies, careers, chemistry, conservation and optics. The Social Sciences Department on the fourth floor includes the Railways Collection, notable for its collection of 14,300 photographs depicting stations and locomotives from the period c1860 to 1965. On the third floor the Arts Language and Literature Department

includes the Barry Jackson and New Birmingham Repertory Theatre Archives and the Early and Fine Printing Collection. Works by Bedford, Frith, Robertson and Muybridge are located within this section, which also contains a large number of photography books and periodicals available for reference purposes.

Situated throughout the Central Library building, the dispersed nature of the photographic collections means that they are neither visible or easily accessible for users. Whilst it would not be desirable or prudent to provide unrestricted access to much of this material, information communication technologies could be used to both increase awareness of the collections, whilst also protecting the original artefacts. The strategies and resources employed by the author in order to examine the viability and appropriateness of using digital technologies to facilitate aspects of the work undertaken with the photographic archive at the Library are discussed in the remaining section of this chapter.

3.3 Research strategies and resources

The research has been advanced by a number of empirical projects. This has allowed the substantive, written component to draw upon practical knowledge gained about the application of various information communication technologies. In this sense the empirical work has provided valuable insights into issues pertaining to the practical use of such technologies by the Birmingham Library Service.

Four projects were instigated by the author in order to examine the Library's use of ICTs' for work carried out with its photographic collections. Each of the projects undertaken examined a different aspect of the utilisation

of information communication technologies by the library service in Birmingham.

When considered chronologically, the first project I initiated furthered the research by providing information about the practicalities of the Library producing a web site to disseminate images. At the time Library personnel had little knowledge of such work and I brokered a partnership with the Computer Sciences Department at Birmingham University. The second project I instigated contributed to the research through the design of an interface. This work was undertaken in collaboration with students from the Graphic Design department at the University of Wolverhampton. The third project - *Images of Transition* - aimed to advance the research by considering the potential impact of telematics on the dissemination and consideration of photographic images within disparate and diverse communities within Birmingham and beyond. Finally, work I undertook with the *Coming to Light* exhibition at the Birmingham Museum and Art Gallery examined the benefits associated with using ICTs' to disseminate information relating to both the Library's collections and photography organisations within the West midlands region. Whilst aware of the ability of telematics to allow the flow of information to be a two way process, the event provided me with an opportunity to examine the viability of disseminating and receiving information using digital means. Walker states that whilst

> ... councils have an obligation to disseminate information, to keep a flow of facts ... on tap ... (traditionally) ... local authorities have thought in terms of making information available on their grounds - in offices and public libraries. Some libraries now offer highly sophisticated equipment for public use in finding things out. But this is still, as it were, information on the local authority's terms.
>
> (Walker 1997: 14)

Part of the rationale of producing the web site and installation created as part of the *Coming to Light* project was to identify if it was possible for the Library to provide information about its collections and services in new and innovative ways.

The Direction of the Research

Although the reasons for undertaking the empirical projects were varied, these reasons can in part be described and contextualised by considering the shape and direction of the research. Having considered the remit of libraries in the first chapter and the capabilities of digital technologies in the second, specific detailed information about the empirical projects is provided in the following chapter. The conclusions drawn from undertaking the practical components of the research are an essential element of the material forming the fifth chapter. Here, though, explanations as to why certain strategies were adopted are provided by considering a number of issues indicative of those relating to the appropriation of digital technologies by librarians and photographic archivists.

Foulds and Hart provide a cogent description of the complex issues relating to the use of digital technologies by photographic librarians and archivists.

> On the one hand you have the new technology and its designers, on the other you have the collection of images, the users of that particular set of images and you have the indexers attempting to organise and categorise these images. These essential ingredients need to be blended in the best possible way, made accessible in the best possible way and presented using an interface in the best possible way in order to produce the most effective image indexing

and retrieval system as the ultimate solution.

(Foulds and Hart 1998: 121)

In examining elements of these "essential ingredients" described by Foulds and Hart, the investigation relating to the practical adoption of digital technologies by photographic archivists and librarians has been dictated by the requirement to consider the utilisation of information communication technologies by the staff at the Birmingham Central Library. In this respect the task of investigating practical solutions was in many ways comparable to that the Initiatives for Access programme established by the British Library in 1994, which, according to Mahoney

> ... was intended to be creative, open and challenging ... predicated on the recognition that (participants) did not and legitimately could not possibly understand all the implications of the fast-changing technology and creative environment being generated by the development of digital techniques and global computer networking.
>
> (Mahoney 1998: 11)

Although Mahoney suggests that those using digital technologies can never be aware of "all the implications" of their actions, Frey nevertheless reiterates that keepers of photography must equip themselves with new skills and knowledge.

> Proper custodianship of collections must now mean employing a greater awareness of disciplines previously far removed from the established practices of photographic archives. File formats, intellectual property law, high-speed data transfer technology and database management are but a few of the specialties demanding the

attention of collection managers.

(Frey 1999: 44)

It is anticipated that the outcomes of the empirical work will assist the library staff with responsibility for the photographic collections to make informed and appropriate decisions about the adoption of specific information communication technologies. The importance of making correct decisions cannot be underestimated. Indeed, there a number of precedents where institutions have have instigated digital projects only to abandon them subsequently. In the mid nineties staff at the National Railway Museum began copying the museum's extensive archive of photographic material using a digital imaging system. Once started, it became apparent that this long term objective was preventing work on the day to day management of the collections - at the time of the project significant numbers of the Museum's photographs were deteriorating. The decision was subsequently taken to redirect resources which had been devoted to digital imaging towards the primary care of the Museums photographic collections (Hopkin 1996: 3 - 8).

The decision to undertake empirical research was made in order to closely examine the practicalities of utilising digital technologies in the management of photographic images. As Evans suggests, a fundamental facet of this process is the ability to easily gain access to materials within a collection.

> A picture is put into a file only that it may be taken out again. The more thoughtfully it is filed, the more easily it can be retrieved. Conversely, a thoughtlessly filed picture can be, to all intents and purposes, a lost picture.
>
> (Evans 1992: 82)

Conservation

Whilst the impact of digital technologies on the conservation of information held on materials within collections has been considered in the previous chapter, Ashley-Smith reiterates the complexity of this issue, describing conservation as neither a simple concept or a single process.

> It may consist of providing an environment in which the photograph will deteriorate at the slowest rate achievable. This will involve control of temperature, humidity, light and pollution. Conservation could also consist of physical intervention using chemical means to deter or prevent further reaction within the photograph. Or it may mean physical or chemical alteration of the original object to make the image more readable. These interventions with the individual object will be costly and may carry a risk of damage which could reduce the informational value of the piece.
>
> (Ashley-Smith 1999: 3)

Whilst Ashley-Smith observes that digital technologies can not be used to conserve original copies of artefacts - they can only be used to conserve electronic facsimiles of original copies - he goes on to describe the variation in photographic ephemera managed by archivists and curators.

> Within the group of materials which are photographs - defined as objects displaying images that have been formed in situ by photo chemical reactions - there is an immense variety of materials and possible constructions. During the first decades of the development of photography a great many processes were used, some more successfully than others. In the majority of collections examples of

> early photographic techniques are likely to be rare compared o the massive output of modern processes, but it is important to be able to recognise the various types because each needs specialised care.
>
> (Ashley-Smith 1999: 4)

Furthermore, the extensive photographic collections held by the Birmingham Library Service are accessed by a wide range of users - each with their own characteristics and, therefore, technological requirements.

> Some will be interested in the photographic image as evidence; some in the image as art; others will be interested in the history of the photographic process, or in the practices of a particular photographer and the commercial world will be interested in the image as exploitable commodity. There are bound to be many more.
>
> (Player-Dahnsjo 1999: 61)

Empirical Activities

I initiated the empirical projects in order to examine a number of considerations pertinent when technology is used to address the needs of a broad range of users utilising an extensive photographic archive. A number of these issues are discussed.

Where digital technologies are used to access facsimiles of photographic materials effective design is an essential element of any interface created. Research has indicated that the adoption of graphical symbols in the design and construction of such interfaces will provide users with greater levels of information and allow efficient access to content (Muter and Mayson 1986: 89). The importance of effective design has become more important in recent years as making visual searches has become an integral

part of operating many computer systems. "The user is more likely to need to search for a file icon, and click this to open rather than type a command at the cursor line" (Scott 1993: 174 - 189). The considerations relating to the designs for of an appropriate interface for users of the photographic resources at the Birmingham Central Library were important because there are a number of significant perceptual and cognitive principles associated with systems where user and computer "communicate mainly in terms of appearance" (Shneiderman 1983). Whilst undertaking preparatory investigations the two designers carrying out the work responded to research which has suggested that the use of touch screens by non-expert users allows for both "efficient interaction and a reduction of stress" (Rodger Harris and Harris 1990). Although the proposals ultimately suggested by Ashley and Jones embraced the use of touch screen technology, they recognised that this solution can itself lead to associated problems - notably those relating to arm fatigue (Sears and Shneiderman 1991). Such considerations reiterate that the effectiveness of the design of the hardware of an interface is reliant on it adhering to a range of ergonomic principles (Osborne 1982). Furthermore

> ... the acceptability of any new equipment and users satisfaction with it may make the crucial difference as to whether or not such equipment becomes regularly used.
>
> (Shneiderman 1982: 237)

The establishment of the empirical projects were important as they allowed a number of practical considerations relating to the design of the interface, the ideal positioning of the hardware housing it (Grant 1987), and its use by such groups as the disabled or the elderly to be considered.

In addition to investigating the principles associated with designing an appropriate and effective user interface, the empirical projects were also

undertaken in order to consider scanning and the digitisation process. The task of converting original artefacts into electronic facsimiles is a complex and involved process. As the practical activities associated with the research demonstrated, it is important that those considering the digital conversion of photographic materials understand the capabilities and limitations of the technology employed. Frey suggests that much scanning hardware has been designed to operate effectively with original artefacts that adhere to prescribed standards.

> Current scanning technology deals reasonably well with current film emulsions and formats, provided that they have been exposed and processed correctly. However, many collections of high artistic and/or historical value were captured on photographic material that not only is now unavailable, but also has deteriorated to some degree.
>
> (Frey 1999: 44)

When scanning material in order to create an image database it is important to establish how much detail in the original images needs to be retained. Gschwind and Frey (1994) describe these decisions as "rendering intents." They suggest that there are several rendering intents that apply when considering the digitisation of original artwork.

> The *photographic image* is rendered ... the images are scanned with the intent to match the appearance of the original photographic image ... The *photographer's intent* is rendered. There are many photographs with high content value that were not exposed or processed correctly. In these cases, the photographer's intent, not the original photograph, needs to be rendered to achieve a pleasing reproduction ... The *original appearance of the photograph* is rendered. Often, older colour photographs are faded and no longer have sufficient visual colour information to make accurate judgments about the original. Reconstructing these photographs

requires special scanning and processing techniques.

(Gschwind and Frey 1994: 513)

As Gschwind and Frey imply, and as the empirical projects confirmed, the scanning process is itself a laborious and time consuming activity, relying on the critical and physical dexterity (and energies) of those undertaking the task. Whilst describing the rendering intents outlined, Gschwind and Frey suggest that with

> ... current scanning and colour management technology, the first case can be automated if it is possible to match the dynamic range of the output to the original ... (whilst) the other cases need manual intervention, either in the initial scanning process or in subsequent image processing.

(Gschwind and Frey 1994: 516)

In addition to investigating considerations in the design of an electronic interface and the scanning and digitisation of photographic materials, I initiated aspects of the empirical work in order to further the research by exploring issues relating to the creation of databases and the retrieval of images. The classification of photographs in order to facilitate their retrieval was initially considered during the creation of the web site containing images drawn from the library's archive of images collected on the Library's History Van. This issue was also subsequently considered during the development of the initial interface and *Coming to Light* projects. These projects involved considering a number of classification possibilities, including those relating to the photographer's name, the title of the image, the attributes of the photograph and its subject matter. Indeed, when exploring the classification of photographs and the creation of an (electronic) database, on first

consideration it is likely that a photographers name will be provided as an index entry to an image. However, except where a photographer has a "named status," it is unlikely that the creators name is important to the end user of the photograph. Underlining this point, Evans suggests that

> ... though a photograph by Thurston Hopkins may be sought because it is by Thurston Hopkins, it is more likely to be picked because it's a good picture of whatever it is.
>
> (Evans 1992: 82)

If, as Evans points out, the classification of images may not successfully rely on the provision of the photographers name, it is unlikely that any title assigned to such material will be of any greater assistance. Whilst some photographs have a title, many do not, and as Barthes has suggested, where a title has been assigned by its creator "... the text loads the image, burdening it with culture, a moral, an imagination" (Barthes 1977: 26). Although a photograph may not be successfully retrieved from a database through information about its creators name or its title, inherent attributes such as shape, colour and texture can be used to identify it. However, as Eatkins has suggested, this solution is itself problematic as difficulties can occur where there is ambiguity in the analysis of the image content.

> Manual techniques of picture classification and indexing are inherently time-consuming, and there is evidence that their effectiveness is often limited. Studies of inter-indexer consistency have revealed wide variations in choice of keywords for any given image, and analysis of user queries suggest that any given image may satisfy such a wide range of queries that it is impossible to foresee them all.
>
> (Eatkins 1996: 124)

Having considered the range of options and possibilities for the retrieval of images from a database, Holt and Hardwick conclude that "an image's main access point from a user request retrieval point of view is by its subject content" (Holt and Hardwick 1994: 244).[9]

Acknowledging that subject content may allow image filing and retrieval systems to be established, Foulds and Hart stress that the complexity of photographic images is often problematic when using such techniques.

> Textual documents are usually shelved using a structured classification scheme, such as Dewey, with broad subject headings such as art, geography, sociology, religion and so forth, with hierarchical subdivisions within each category. In this respect, pictures can also be filed broadly by subject. It is when it comes to filing *within* these general categories that difficulties emerge. A whole new spectrum of influences and ideas is brought to bear on how both the indexer and the end user come to view the image.
>
> (Foulds and Hart 1998: 21)

As a result of efforts to address the problems identified by Foulds and Hart, a number of researchers have attempted to break down an analysis of image subject content into different levels. In addressing this issues, Brown et al have advocated using the *pre-iconographical, iconographical* and *iconological*

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9 See also MARKEY, K. (1986) *Subject Access to Visual Resources Collections: A Model for Computer Construction of Thematic Catelogs.* London: Greenwood Press.; ENSER, P., and McGREGOR, C.G. (1993) Analysis of visual information retrieval queries. *British Library R&D Report 6104.* London: British Library.; ENSER,G.B (1996) Information need in the visual domain. *British Library Research and Innovation Report 27.* London: British Library and Innovation Centre.

model supplied by Panofsky as a basis for a framework of image analysis.[10] However, other research has indicated, problematically, that inconsistency actually increases with the more in depth levels of indexing suggested by those advocating the use of relatively complex models. Markey believes that

> ... the probability of error is greater in collections whose secondary subject matter is described than those whose primary subject matter is described because the indexer has carried out a process that required two steps and becomes increasingly subjective as it proceeds beyond the first level of interpretation.
>
> (Markey 1986: 121)

Studies have suggested that it is possible to index images by emotion.[11] However, it is possible to assign an emotional representation to an image, this solution is itself problematic because different images can evoke different emotions in both indexers and in users when attempting to retrieve images. These difficulties, as with those made apparent by the various strands of research which has considered the various options available when utilising digital technologies to create electronic retrieval systems, suggests that information professionals will probably need to provide textual access to image subject content for many years to come.

> The fascination of technology is still overwhelming ... searchers will

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10 Panofsky describes the *pre-iconographical* aspects of an image as those which encompass the primary subject matter of a picture - the attributes that are immediately identifiable. *Iconography* - secondary subject matter - Panofsky describes as the descriptive label placed on those pre-iconographical aspects of an image which represent motives. "It is apprehended by realising ... that a group of figures seated at a dinner table and in certain poses represents the Last Supper....a correct iconographical analysis presupposes a correct identification of the motives." The *iconology* of an image is established by " ... ascertaining those underlying principles which reveal the basic attitude of a nation, a period, a class, a religious or philosophical persuasion - qualified by one personality and condensed into one work." PANOFSKY, E. (1955) *Meaning in the Visual Arts*. Harmondsworth: Penguin. See also ENSER,G.B (1996). Ibid., BROWN, P., HIDDERLEY,R.,GRIFFIN, H. and ROLLASON, S. (1996) The democratic indexing of images. *The New Review of Hypermedia and Multimedia: Applications and Research*. 2. pp107 - 120. ENSER, P., and McGREGOR, C.G. (1993) Ibid.

11 ORNAGER, S (1996) View a picture: theoretical image analysis and empirical user studies on indexing and retrieval. *Svensk Biblioteksforskning*. 2/3.36 cited in FOULDS, S and HART, C. (1998)

> continue to access databases, even image databases, by means of words.
>
> (Ornager 1994: 215)

In addition to those aspects already discussed, I initiated the empirical projects in order to investigate a range of issues associated with the digital conversion and storage of photographic images. The work undertaken has highlighted that photographic librarians and archivists will become increasingly involved with the preservation and care of new, evolving photographic media (Orlenko and Stewart 1998). As a result of digital technology, prints are being produced in which dyes and pigments are directly and mechanically printed on to a prepared paper base. It is possible that this method of image production may supersede the traditional wet chemical process that has dominated photography this century. Water (1992) has suggested that one of the major obstacles to the long term preservation of digital information was the lack of industry standards, which tend to be distillations of vendor responses to the imperatives of a competitive market place. Some years on standards are now being addressed. In the USA the Research Libraries Group (RLG)[12] and the IT10 working group of the Photographic and Imaging Manufacturers Association (PIMA)[13] have devoted themselves to producing standards, as has the Commission on Preservation and Access (CPA).[14] On this side of the Atlantic the European Commission on Preservation and Access (ECPA) has been dealing with comparable issues since 1994.[15]

Whilst the empirical activities provided valuable insights into the

12 Research Libraries Group; http;//www.rlg.org/rlg.html.

13 PIMA/IT10: http://www.pima.net/it10a.htm.

14 The Commission on Preservation and Access, 1400 16th Street, NW, Suite 740, Washington, DC 20036-2217

15 The European Commission on Preservation and Access. PO Box 19121, NL-1000 GC Amsterdam, The Netherlands. http://www.knaw.nl.ecpa/

practical application of information communication technologies by the library service in Birmingham, the research has also considered their adoption on a national level. The continued adoption of digital technologies by the library service has resulted in a number of initiatives being considered by central government. Reports such as *The New Library: The People's Network* have raised fundamental questions about the role of the service in relation to the impact of information communication technologies. Many of the debates centred on the role of the library service in future years have considered the global nature of the technologies under consideration. The research has considered the merits and implications of the Birmingham Library Service addressing the needs of a "user-audience" that is geographically displaced, existing beyond the confines of its recognised constituency.

Writing

Fundamental to the research process was the documentation of the work undertaken. This aspect of the work provided me with important and valuable opportunities to reflect on the progress of the research and the direction it was taking. The research was also informed and directed by the process of writing. This creative activity enhanced the research insofar as ideas were clarified (and disregarded), whilst opportunities for investigation became apparent. Thus, whilst the strategies outlined occurred by and large consecutively, concurrent research was also being directed and recorded through the writing process.

With the commencement of the research the resources of the Birmingham Central Library became available. Whilst in one sense the most important resource was the archive itself, other, although no less important

resources, were also provided by the Library. Office space and the provision of access to computers, telephones, photocopiers and mailing facilities were essential resources which facilitated the research activities undertaken. Having a base within the Library also helped the author to gain the trust and support of staff. During the induction period it became apparent which individuals might be able to inform and contribute to the research.

Interviews

Semi-structured interviews with library personnel and representatives of outside agencies were undertaken throughout the period of the research. This interviewing methodology was chosen as the best qualitative approach by which to complete the research. The response rate was assured and the direct interaction between the author and the interviewee allowed for the clarification of answers where necessary (Chen and Hernon 1982: 23). Furthermore, the semi-structured nature of the interviews allowed non-directive questions to be asked in order for the interviewee to respond to a broad area of interest, whilst voicing their opinions honestly and freely. The author recognised the importance of minimising the risk of bias by endeavouring to ask questions in a manner that would not lead the interviewee. As has been recognised "the spoken or written word has always a residue of ambiguity, no matter how carefully we word the questions and report or code the answers" (Fontana and Frey 1994: 361). The author also recognised the ethical responsibility of confirming with the interviewee that both the information given was correct and that he or she would permit its use within the research (Kvale 1996: 111).

The empirical work undertaken in order to examine the viability of the BLS utilising aspects of information communication technologies gathered its

own momentum as result of the strengths, interests and capabilities of the partners involved. Whilst the research was greatly enhanced by these partnerships, the agencies themselves also benefited through participation. For example, until they became involved in the research the officers responsible for the *Assist* project had been unaware of the work undertaken by their library colleagues with the History Van: profitable and mutually beneficial links were made between the departments as a direct result of their participation in the research.

My involvement in each of the empirical projects was extensive. In addition to acting as a day to day contact for each of the partners, I instigated and recorded the outcome of meetings and decisions relating to the projects. Through these activities I was able to gain an overview of the viability of the BLS employing information communication technologies in order to enhance the work undertaken with its photographic archive. A large number of practical considerations soon emerged. Indicative issues include those pertaining to the additional expertise that would need to be sought, the cost of adopting ICT's and the public response. Whilst acting as project manager I was also involved in promoting the work to potential sponsors and others who could assist the projects undertaken: I contributed to the discussions with the representatives of Photo 98 and Dunns Professional Imaging, both of whom were able to promote and publicise the *Coming to Light* interactive initiative through the support and sponsorship each subsequently gave.

The resources employed to enable the empirical components of the research were mainly controlled by the partners themselves. In this sense the research was enhanced indirectly through the use of the resources of the agencies concerned. For example, the information collated as a result of undertaking the *Coming to Light* web site and interactive component was primarily gathered by the staff of Photopack, the community education and

photography organisation which had participated in the project. Jurgis Lucas, Photopack's co-ordinator, employed the company's computer and mailing resources in order to gather the information from each of the organisations represented. Similarly, when producing the interface the two University of Wolverhampton students, David Ashley and Matthew Jones, used their own computer hardware in order to realise the project.

The research undertaken has been informed by a range of individuals, including industry representatives, librarians, archivists and academics. In addition to attending a number of seminars and trade fairs I met a large number of individuals at conferences and presentations. The opportunity to give papers at conferences have been valuable in establishing contact with a number of individuals who have been active in the area of investigation.[16] E-mail has also been used to gather information. The History Van web sight included a direct e-mail link to my computer at home, whilst a request for information was also placed with a relevant newsgroup. Data has also been gathered by inviting individual responses to the interactive projects: the *Coming to Light* kiosk included a questionnaire, allowing users to respond to the programme created.[17]

3.4 Conclusion

The Birmingham Central Library holds a photographic collection of considerable national importance. Whilst the library staff have responsibilities in ensuring the preservation and safe keeping of these

16 MORRIS, A. The Digital Acquisition and Dissemination of Photographic Ephemera Undertaken by the Birmingham Library Service through the Use of its History Van *Care of Photographic, Moving Image and Sound Collections Conference Proceedings*, Institute of Paper Conservation, 1998.

17 See Appendix 1 for a copy of the questionnaire.

materials, they also have a duty to provide access to these resources. The complex nature of these responsibilities have been compounded in recent years by advancements in the capabilities of information communication technologies. As the library profession has begun to address the possibilities for preservation and access associated with digital technologies, a new set of problems are having to be addressed, new policies devised. As Svenonius (1994) states, when considering issues relating to the creation of electronic databases,

> ... to address these questions requires some probing into the nature of subject indexing as well into the nature of linguistic, aural and verbal symbolism.
>
> (Svenonius 1994)

In addition to "probing" the areas described by Svenonius, the empirical work undertaken as part of this research has examined how digital technologies may be employed to enhance understanding of the photographic medium. However, as Mahoney reiterates, the importance of such projects has to be kept in perspective.

> Information technology has unprecedented potential to deepen our understanding and help us to learn. Like many other new technologies it will enhance and add value to the pattern as a whole: it will supplement, not supplant.
>
> (Mahoney 1998: 12)

Whilst in many respects the issues facing the staff at the Birmingham Library Services are typical of those confronting the profession as a whole, in other areas these issues are as unique as the collections themselves. The following

chapter considers in detail the empirical activities undertaken in order to investigate some of these issues further.

Summation

In summary this chapter has outlined the following points:

- The photographic collection of around two million artefacts held by the Birmingham Library Service remains in most part un-catalogued.
- The history of the library service in Birmingham (as elsewhere) is intertwined with that of the museums service.
- The Birmingham Library Service staff have fostered close links with the voluntary sector in the West Midlands.
- The photographic holdings within the Birmingham Central Library are dispersed throughout the building's seven floors.
- The range of empirical activities undertaken as part of this research have explored how "content owners" and "content users" within the Birmingham Library Service might respond to the use of information communication technologies in a number of contexts.
- In addition to the empirical work, a number of research strategies have been undertaken in order that the role of information communication technologies within the Birmingham Library Service's photographic archive may be evaluated.

The substantive implications of these points I believe are as follows:

- Because libraries and museums services share a common heritage they would benefit from co-operation where the use of information communication technologies are explored.
- In the light of technological advances the Birmingham Library Service

staff should continue to derive benefit from their close associations with other non profit organisations in the west midlands region and beyond: each often has mutually supportive agendas'.

- Information communication technologies have the potential to link the disparate collections held within the seven floors of the Central Library building.
- Custodians within the Birmingham Library Service have to take care when balancing the ability of information communication technologies to be used as a *preservation* tool with the continued need to provide *access* to original collections.

CHAPTER FOUR

CASE STUDIES

4.1 Introduction

This chapter is concerned with the empirical components of the research. The four projects have addressed aspects of the Library's use of digital photographic technologies, whilst the data gathered has provided information about the capabilities of such technologies as they relate to the acquisition and dissemination of photographic images. The projects have highlighted a number of practical issues relating to the procurement and adoption of various technologies which have been introduced by the Library in recent years.

Staff at Birmingham Central Library began using digital technologies to facilitate work with the photographic collections in the early 1990's. In order to provide a background to the research I undertook, this chapter begins with an overview of the Library's previous work in this area. The chapter goes on to address the evolution of the empirical components of the research, beginning with the web site which included images from the Library's History Van archive. This project was followed by work undertaken with undergraduate students at the University of Wolverhampton, culminating in the design of an electronic interface. As a consequence of both of these initial projects, staff at the Library collaborated in a larger project to create a web site linked to an exhibition of the Library's photographic collections held at the Birmingham Museum and Art Gallery in the autumn of 1998. The *Coming to Light* website contained information about the exhibition with this title in addition to providing an extensive directory of photographic resources within the west midlands. This chapter also gives details of a fourth project, *Images of Transition* , which set out to explore issues relating to the dissemination of photographic ephemera

belonging to some of Birmingham's ethnic communities. Although the *Images of Transition* initiative did not proceed beyond its preliminary stages, valuable information was nevertheless gathered as a result of attempting to undertake the project. These observations are summarised at the end of the chapter, as are those made as result of undertaking the other empirical projects.

4.2 Background

In order to contextualize the empirical work I initiated, three projects initiated by the Birmingham Library Services have been considered. The work with the History Van, the creation and use of the *Retrievilist* and *Archivilist* software and *Photopoint* are recalled. The work subsequently undertaken as part of my research - the web sites and the creation of the interface - were in part shaped by these earlier projects, whilst of course any future developments will themselves be informed by the broad range of work undertaken by the Library staff in this area.

History Van

With funding made available through the Urban Programme, in 1992 Birmingham Library Services procured a coach built vehicle for the purpose of obtaining electronic copies of photographic material held by the people of Birmingham. The History Van has been used to collect material, which, stored digitally, is supplementing the Library's photographic collections. In addition to a range of audio visual resources, the vehicle has seating for eight adults, a wheelchair lift and an awning to allow activities to take place in the open. The inventory includes a video player and display, a slide projector with screen and sound recording equipment. Also included are an Apple

Macintosh computer, a scanner and a laser printer.

In recent years the History Van has attended community events such as fairs and cultural celebrations, in addition to being used to undertake work with groups at a variety of city-wide venues, including branch libraries, schools and day centres. When the van initially came into service it became apparent that whilst attending venues such as day centres and homes for the elderly, little could be achieved during one visit. It has proved necessary to undertake an introductory session with such groups in order that participants may have the opportunity to seek out suitable material to be scanned during a subsequent visit. Staff recall that the van has been of particular interest to school teachers, who often perceived the vehicle as an opportunity to introduce pupils to information technology and the digitisation of artefacts. Whole classes and, in at least one instance, an entire school, have boarded the vehicle in order to introduce pupils to computer hardware and software. Of the facilities and work undertaken with the van, the staff spend around 50% of their time scanning photographs, 40% watching and discussing video materials and approximately 10% undertaking oral history work. Whilst the bulk of the material collected with the A3 scanner is photographic, other ephemera such as newspaper cuttings and maps are also collected. Photoshop software is used at the time of acquisition to make adjustments to image contrast and sharpness, although no other enhancements are made at this stage. The laser printer allows donors of material to receive a hard copy of the digitised image collected by the Library Service. This is primarily offered as a good will measure, a way of acknowledging the support of those who have helped to contribute material to the Library's archives. The methodology adopted ensures that members of the public are able to take away their original artefacts at the time of acquisition, thus minimising the risk of losing or damaging material.

The deployment of the History Van has presented the Birmingham Library Service with a number of difficulties. An important problem encountered by those operating the vehicle has been public comprehension of its purpose. The concept of scanning and digitising photographic material is little understood by many users, particularly the elderly. The vehicle therefore has an important educational role, demonstrating some of the work currently undertaken by libraries with information technologies. The staffing and facilitation of the resource has also been problematic for the Library. The History Van has been the responsibility of Richard Albutt, the Community History Development Librarian, based in the Local Studies and History section at the Birmingham Central Library. Working alone has presented this member of staff with a number of logistical problems, not least those relating to security. Whilst it was intended that community librarians would also use the van, they have failed to do so, citing its size and their reluctance to drive it. These problems are compounded because a lack of restrained seating prevents passengers using the vehicle. This restriction becomes problematic if staff wish to undertake work with colleagues or volunteers. Parking the van at community libraries often presents difficulties, especially where there is no adequate provision. This has required the staff to move the computer hardware off the van and into the venue it is attending, a scenario that undermines the primary purpose of the vehicle. Because library personnel have been reluctant to operate the van in the past agency drivers have been employed to drive the vehicle. This solution was short lived, however, as the individuals hired sometimes lacked the sensitivity required to front a publicly owned library resource and behaved in an inappropriate manner.

One of the primary benefits of the History Van is that the Birmingham Library Service has been able to identify opportunities to acquire photographic material relating to particular subject matter. Although much

of the material collected is often duplicated and therefore well represented - images of wedding parties, school groups and pageants dominated the material collected at one time - the Community History Development Librarian has been able to address inbalances in the Library's collections by making requests for specific types of images. After a request was made for images of street parties, for example, these scenes are now abundant within the Library's archives.

Archivilist and *Retrievilist*

At about the same time that the History Van was commissioned in 1992, staff began scanning and digitising images from the Library's photographic collections. Martin Flynn, Central Library Manager - Arts and Leisure Services, Richard Albutt, the Community History Development Librarian and Robert Ryland, a Library Assistant with an interest in this area, formed a working group to consider the application of digital technologies within the photographic archive. Initially this group continued with the work of the then retired member of Library staff, Philip Allen, who had previously instigated a collaborative project with the University of Central England (UCE). In the early 1990's Allen had worked with Andy Saxon, a graphic design lecturer at UCE, and his brother David, a computer programmer. This collaboration resulted in the creation of two pieces of bespoke software, *Archivilist* and *Retrievilist*. The *Archivilist* software was intended to make the process of scanning and archiving electronic facsimiles of photographs straightforward for the library personnel, whilst the *Retrievilist* software was created to provide a navigable interface for public use. The *Retrievilist* software was designed to work within a public access terminal with a touch sensitive screen.

In the mid 1990's Ryland and Albutt continued to scan and digitise photographic images from the Library's collections. An A4 scanner was used, making it necessary to scan larger prints in sections, to be "joined" at a later stage using Photoshop software. Negatives were scanned by placing a lightbox over the negative, sandwiching the image between the scanner and the light source. Ryland and Albutt continued to digitise the collections in order to acquire sufficient material to establish *Photopoint*, a project devised by the working group. *Photopoint* was to exist as a series of stand alone kiosks linked to the Library cataloguing system. *Photopoint* would allow electronic files to be transferred between the Central Library and the branch libraries. However, because at this time the branch libraries were linked only by existing telephone lines it became apparent that it would not be feasible to transfer large picture files as envisaged. The original intention had been to provide the public with a hardcopy of any image found using the *Retrievilist* software on *Photopoint*, adopting a photocopier like mechanism for payment at the time the request was made. The proposal proved too impractical, however, and the emphasis changed to providing the public with a low cost, low resolution black and white laser printed image, either immediately or at a later time, depending on the time constraints prevailing.

Despite the intentions of the working group the use of the *Photopoint* kiosks running *Retrievilist* software did not occur. There appear to be a number of reasons why these projects failed to evolve. Fundamental questions regarding the purpose of any digital archive had not been addressed. Staff were unsure about who would use these resources and for what purpose. With a limited number of staff involved with the projects, the task of scanning and digitising the collections soon became onerous. Ryland calculated that it required approximately twenty minutes to scan and correct each image using the *Archivilist* software. With a collection of over one million images, one operator working eight hours a day would therefore

require one hundred and fourteen years to scan the Library's photographic collections. The scanning process had obvious financial implications for the Library whilst the human aspect of the exercise also merited further consideration. The quality of the scans dropped after the staff had been working for a number of hours. Despite their initial enthusiasm, the practicalities of embracing the digitisation process eventually had a detrimental effect on the commitment of the Library staff and their willingness to pursue it.

The reluctance to undertake digitisation work systematically was compounded by problems with the *Retrievilist* software. Although it is likely that these problems could have been corrected, the working group felt that the project was influenced adversely because the Saxon brothers were in full time employment. The fact that neither were obliged or committed to resolving the problems with the software contributed to the project becoming moribund.

Although some aspects of the BLS' digitisation work failed to evolve successfully, in many respects the Library's involvement in this area was both innovative and forward looking. The capabilities and potential development of the History Van have led to many enquiries from institutions involved with photography within the public sector: that this project was instigated in the early 1990's is testament to the vision of the staff involved. The same could be said of the *Archivilis*t and *Retrievilist* software. By the mid 1990's this project was eclipsed by the development of comparable software by a number of commercial companies. Although *Archivilist* and *Retrievilist* were never properly adopted by the Library, that there existed a potential use for such software is evident in the fact that a number of programmes have been marketed in recent years. Furthermore, titles such as Image XS and Photo Album only became available nearly five years after the *Archivilist* and

Retrievilist programmes were initially developed.

Despite the difficulties with aspects of the projects, by 1996 the work undertaken with the History Van and the *Archivilist* and *Retrievilist* software had nevertheless convinced the Library staff of the need to continue to explore the use of digital photographic technologies. It was at this time that my research commenced. During preliminary discussions staff indicated that it had been hoped to integrate the database software created by the Saxon brothers with telematics technologies. My decision to examine the mechanics of creating a web site with photographic images led to a pilot web site containing images from the Library's History Van collections. The site was produced in collaboration with Birmingham City Council's telematics project, *Assist*, and the Computer Sciences Department at Birmingham University. At this time the Head of Photography at Birmingham Central Library, Peter James, was in the initial stages of planning an exhibition at the Birmingham Museum and Art Gallery in the autumn of 1998. James expressed a desire to include a digital element to this exhibition, preferably a web site. This aspiration underpinned the importance of the pilot site: its success, or otherwise, would influence the planning for what became known as the *Coming to Light* exhibition.

4.3 Pilot Web Site

Having made the decision to explore the potential of presenting photographic images on the World Wide Web, I set in motion the process of creating a site. Material would have to be collated and the pages held on a server. At this time Birmingham Library Service had no discrete web presence - only a limited amount of information about the Library Service was contained on the Birmingham City Council web site, *Assist*. It seemed

appropriate, therefore, to put the proposal to explore the creation of a photographic web site to staff within the City responsible for *Assist*. I subsequently met with the relevant officer, Andy Mabbett, and the project commenced after a series of discussions and meetings which I instigated.

During the time that the initial contact was made in February 1996, Mabbett was based in the Training Services Division of the Economic Development Department (EDD) at Birmingham City Council. The *Assist* project had evolved from work undertaken by the EDD in the west Northfield area of Birmingham. The Council had been providing information about training and job opportunities relating to this area via an experimental telematics project. The Computer Science Department at the University of Birmingham had been invited to participate, researching the public use of on-line services. The project evolved as participants requested increasing amounts of information. The Council's Communications Unit subsequently suggested that the *Assist* project should have a city wide remit and this occurred in June 1995. In February 1996 the *Assist* personnel reflected the research based nature of the project: Mabbett had overall editorial control of the web pages, whilst two Birmingham University research students, Mark Robbins and Oliver Harvey, were responsible for authoring the pages and managing the site. Robbins and Harvey were overseen by Dr Bob Hendley, a member of the teaching staff within the Computer Sciences Department at the University.

When I first contacted Mabbett, in the spring of 1996, the *Assist* project was still at an experimental stage. Mabbett indicated at the time that it would be at least two years before *Assist* would become "less experimental." The coordination and control of information had yet to be determined, as did policies relating to the use of e-mail within the City Council. Mabbett's personal view was that *Assist* should direct individuals to the information

required, suggesting that the site should be both interactive and pro-active, responding to peoples' requests for information. Citing the on-line Balti Restaurant Review, Mabbett acknowledged that whilst this section was "...trivial and frivolous..," it was nevertheless important because it demonstrated the mechanism for feedback and interaction that could be applied by the Council: information from citizens could be received and, in theory at least, acted upon.

The proposal to create a web site containing images drawn from the Library's History Van archive was in line with the experimental nature of the *Assist* site at this time. Mabbett was unaware of the work undertaken with the History Van and responded positively to the proposal that a selection of images could be included on a web site. The proposal was accepted in part because Mabbett, operating with the EDD, identified economic benefits of using the technology being investigated; Mabbett's personal view was that other photographic libraries and picture researchers would be able to access the images and that the potential commercial possibilities associated with the archive could be significant.

In early April 1996 I convened a meeting of the prospective participants in the project. In addition to the author, Andy Mabbett, Dr Bob Hendley, Mark Robbins, Richard Albutt and Peter James also attended. I presented a brief discussion paper outlining the possible aims of the Library's use of telematics in this area.[1] The paper suggested that the Library might be able to *promote* its photographic work, in order to reach a wider audience, both nationally and internationally. (The Library's photographic work had previously featured in a BBC 2 series, *Underexposed*, and James and Albutt wished to exploit this coverage. A second series was anticipated and they hoped that the producers might consider including any telematics project

1 See Appendix 2

within the programmes.[2]) The discussion paper also suggested that the use of telematics technologies might allow the Library to *collect* images. James and Albutt had indicated that because of omissions within the Library's collections they wished to acquire images relating to ethnic communities in Birmingham. Any development in this area might also have enabled the Library to explore the *economic* potential of telematics, allowing staff to examine the commercial use of the collections in order to enhance revenue. The creation of a pilot web site would also enable Library staff to gain an insight into the feasibility of producing a web site for the exhibition planned at the Birmingham Museum and Art Gallery in 1998.

Brief

The outcome of the meeting in April 1996 was an agreement that the partners would produce a web site containing photographic images drawn from the Library's History Van collections.[3] Richard Albutt, the Community History Development Librarian and the author would compile a selection of images of particular interest to the education sector. Birmingham University had undertaken work with Birmingham's Education Department and Dr Hendley felt that it would be beneficial to provide material of particular interest to schools. (The Education Department had initiated a programme to provide all schools with Internet access by the end of 1996. The University's Computer Science Department had a key role in facilitating this work by hosting content and providing a consultancy role.) The pilot site would contain approximately 100 images, 80 drawn from the History Van archive with the remainder from the Library's main collections. By assisting in the design and creation of the site Mark Robbins and Oliver Harvey would be

2 Despite the indications given by the programme's production team at the time, a second series has not been commissioned to date.

3 See Appendix 3 for a report of the meeting

engaging in an activity that Ostrow believes is particularly suited to the needs of the young.

> The opportunity to expose young students to the riches of primary visual resources is one of the most exciting features of the digital era. Research libraries must decide what priority should be given to this extended audience, especially if it comes at a cost of service to scholars and researchers.
>
> (Ostrow 1998: 19)

Evolution

In the following weeks I worked with the Community History Development Librarian, selecting and compiling material for the web site. Images that fell below a predetermined technical level were omitted, as were those that were not relevant to the project - if they had no connection with Birmingham or depicted contemporary views. Photographs were also rejected if the subject matter was likely to cause offence. An image depicting a minstrel with a blackened face was rejected for these reasons. Captions were also compiled. Where the image files resided in the *Retrievilist* software this information already existed: the Library staff had assigned each image with a unique number at the time of acquisition and this related to a separate, handwritten, note containing information about the photograph. The number relating to each image was called the "HV" number, for example, "HV125" . This information included such details as the content of the photograph, the date it was taken and, where known, the photographers name. The task of editing the material for the website was made difficult because the Library staff had not been careful when compiling the original image information, which was sometimes missing, ambiguous or illegible. 96 images were eventually selected, from around 300 viewed. Having made

the initial selection each image was then assigned a "decade" folder. The decades ran from 1880 to 1970. Where the images had no date they were placed in a folder called "?". Having been assigned a discrete decade folder, a list was compiled with each image being given a new Internet Project, or "IP", number. At this stage it was envisaged that the *Assist* staff would create a simple database, allowing related images to be presented after an initial request. The author and Albutt therefore compiled a list of related photographs for each image. In addition I wrote a brief introductory text giving details of the History Van and the Library's photographic collections. This information was forwarded, along with the selected images, to the *Assist* team.

Summary

Although the pilot web site created by the *Assist* team was in many ways crude in its design and cumbersome in its execution, valuable lessons were learnt as a result of undertaking the project. In addition, an important link had been created between the *Assist* team and the Library personnel. The pilot site had been designed by Mark Robbins, a History graduate, a fact which, despite his technical abilities, was reflected in the aesthetics of the site. It became apparent that when considering the realisation of any subsequent project, skilled (graphic) designers would need to be engaged.

When reviewing the site in the autumn of 1996, it was clear that the operation of the site could have been improved in a number of ways. The matching routine in particular was inadequate. The Internet Project (IP) numbers related to too many original History Van (HV) numbers. It was apparent that the relatively small amount of content descriptive metadata held on the site did not warrant the construction of detailed searchable fields

(Del Bimbo 1999). This emphasised the point that a database (of images) can, in effect, be *too small*. Whilst this seems paradoxical given the problems of retrieving specific photographs from a large archive, it does have implications for the Library if ever a searchable collection of digitised images is considered.

By the autumn of 1996 the pilot web site was receiving 10 - 20 hits a month. Whilst it was not established why people were visiting the site, during the review Robbins indicated that the *Assist* pages received a significant number of enquiries from individuals and organisations undertaking historical research and educational work. This observation was reflected in the e-mail correspondence I received. The bulk of correspondence represented general requests for information about the existence of photographs related to Birmingham. The following examples are indicative of the many responses received.

I am a theatrical set designer from the USA. Currently I am working with a 2 year college drama professor on production of Willy Russell's play Blood Brothers. He would like the setting of the play to represent typical housing in an English Midlands city, Birmingham, Manchester, etc. I started searching the Net for some sources and came upon your collection of wonderful historical photos of Birmingham and wonder if you might be able to point me in the right direction for my research.

Have you encountered any images of Bickenhill Hall? My wife's grandfather lived there circa 1910 before it was converted to a boys' school. Rick McFarlane Alberta, Canada

We are a PR company seeking photographs illustrating the manufacturing or industrial capability of Birmingham/the Midlands for use in a brochure. Do

you have anything suitable?

Dont know anything about digitising photo's, but would like to thank you for providing a marvellous walk down "memory lane" f or those expats like myself who are a little long in the tooth (77 years young). Hope you can find some more photos of "Brum" to put online. Thanks very much. Clive Charman. Adelaide. South Australia.

Following the review of the site it was agreed by the partners involved that because of the problems associated with its design and search results it would be appropriate to instigate new initiatives, drawing on the valuable knowledge and experiences gained. In addition, by this time the staff and students at the Computer Sciences Department were unable to commit additional resources to the project. I therefore decided to explore the possibility of working with other partners in order to examine the technologies being investigated.

4.4 Interface

The proposal to construct a prototype interface emerged after discussions I had with the Head of Photography at the Central Library,Peter James and Richard Albutt, the Library's Community History Development Librarian. During initial meetings in February 1996, consideration was given to the development of a CD Rom. At this stage it was hoped that work would be undertaken to produce a CD Rom specifically aimed at those Library users who have difficulty accessing the photographic archive by conventional means. It was felt that groups who could not visit the Library (perhaps because of a disability or personal circumstances) might benefit from the use of technology which could, in effect, take aspects of the Library's

photographic collections to them. Because Albutt and his colleagues had already collected over 500 images with the History Van he was keen to explore the possibility of using this material for the production of a CD Rom. This decision was also made on the basis that it would be both time consuming and expensive to select and scan materials from the main photographic collections. An agreement was also made at this stage to invite staff and students at the University of Wolverhampton to participate in the project.

Following the initial discussions with staff at the Central Library, in April 1996 I made contact with Ian Madeley, Senior Lecturer in Graphic Design at the University of Wolverhampton. Madeley expressed an interest in the proposal indicating that it would be of particular interest to third year students whose involvement would be beneficial in a number of ways. Students could undertake research into similar projects and examine comparable material available, whilst being a live project any outcome would lead to a series of authentic design recommendations and provide students with an arena in which to show their work. It was decided that second year students undertaking the Graphic Communication module would be invited to participate in the project before the end of the second semester. This timing would allow the students involved to undertake preliminary work during the summer months.

The brief given to the Graphic Communication students would involve the construction of an interface enabling the general public to access photographic materials stored as electronic files. Preliminary work undertaken by library staff had indicated that commercial database titles (including Image XS and Photo Album) were inappropriate for use by the general public, primarily because of the screen interface provided.[4] Although

4 Titles such as Image XS and Photo Album were considered by the Library. See also Chapter Two page 81

the search mechanisms and storage capacity of these titles were powerful and effective, such benefits would be offset if the complex, often bewildering, nature of the screen menus made them inoperable by the public.

Brief

The brief for the interface project evolved in the spring of 1996 during a series of meetings between the author, Peter James, Ian Madeley and a Visiting Lecturer at the University of Wolverhampton, Peter Burgess. The group concurred that because of the enhanced capacity of commercial software and the complexity of creating a database, the brief would deal solely with the design of an interface that could be incorporated as a "bolt-on addition" to a commercial database title. The brief also considered ideas for a booth that would house the hardware used - this would be appropriate for siting in branch libraries and other community venues. During these discussions it was apparent that the abilities and expectations of the students had to be considered. It would have been inappropriate to engage students in a fully fledged production process as their commitments precluded them from undertaking this time consuming activity. It became clear that it would not be possible to produce a functioning CD Rom with the resources and time available. During the initial discussions the essential components of the project were finalised as follows;

Users:	General Public
Contents:	An introduction to the photographic collections Sample images Information about representative images

	Information about the Library's collections
	Information about accessing the Library's collections:
	Floor plan of the Central Library
	General Information: location, opening times, etc.
	Funding acknowledgements and credits
Requirements:	Portability - facility to be used in public venues
	Print out facility: images and/or text
	Interface to be "bolted on" to a commercial database title
Updatable	Interface does not date
	Set up and operation suitable for non trained staff
	Operations manual to be provided

Evolution

As initially planned, at the end of the second semester the project was offered to second year students undertaking the Graphic Communication module. Working as a team, two students, David Ashley and Matthew Jones undertook preliminary work in the summer and autumn of 1996. When I reviewed the project in November 1996 they suggested that the emphasis of the project should change. After initial research Ashley and Jones felt that it would be appropriate *not* to produce a VDU interface. Emphasising that the purpose of the project was to utilise digital technologies in order to increase public awareness of (and therefore access to) the photographic collections, Ashley and Jones wished to put forward ideas for an installation,

incorporating projected images and sound. Citing research which indicated that the public can be reluctant to use computers with touch screens, Ashley and Jones proposed widening the scope of the project (Scott 1993; Cherry 1989; Harris et al. 1990). Both felt that it was important to make the experience of searching for photographic materials interesting and stimulating. Their research had suggested that such an approach would lead to an enriching experience, which would ultimately encourage users to access the Library's photographic collections. Ashley and Jones therefore proposed an installation drawing on associations with H G Welles' *"Time Machine."*

The initial idea put forward by the students proposed using video projections and sound within an enclosed "dome". Users would be able to "search" the collections and be provided with a range of information. The students suggested that the control mechanisms should be tactile, with knobs, buttons and dials. Although the students had been actively encouraged to explore the many possibilities associated with the brief, following discussions with Peter James it was felt that despite the possibility of developing the proposal at a later date, in the short term it would nevertheless be appropriate to produce an electronic version of the interface proposed. Whilst James saw the potential of the installation solution he felt that the original intention of the brief, to allow the public to access the photographic collections in remote locations, should be adhered to.

By February 1997 Ashley and Jones had refined their proposals and begun work on a prototype. Having designed an initial interface on paper, Ashley and Jones proposed developing this model in order to produce a demonstration programme incorporating photographic images. At this stage the designers indicated that they would require approximately 100 images in order for the demonstration programme to function. Furthermore, by this stage it was realised that because of the work required it would not

infact be feasible to marry the students work with a commercially available database. Nevertheless, it was important that the product should demonstrate to the Library staff the functions of the interface proposed. By the spring of 1997 it was clear that the students could go onto develop one of three solutions: a self running model with no interaction; a prototype with a limited amount of interaction or a fully fledged model allowing full interaction. After a series of discussions with the partners involved the final prototype consisted of a hard wired programme, with limited functionality. Nevertheless, the product successfully demonstrated the operations of the controls proposed and the search mechanisms employed.

Summary

The design of the interface created by Ashley and Jones was informed by an assessment of the *Retrievilist* software produced by David and Andy Saxon. Having considered the practical use of the *Retrievilist* software with Library staff, the author and the students devised the prompts to be utilised within the programme. Users would initially be invited to respond to one of four commands relating to date, location, photographer and subject matter. These fields would operate in a hierarchal manner. If choosing to search for images by date, for example, users would first identify a decade, followed by a specific year and day. Where the search was made using a photographer's name, the programme would provide closely matched alternatives. A request for a photograph by Brandt would also give suggestions of images by photographers such as Brand, Bran and Brandon for example. These options were designed to assist those unsure of the name and spelling of the photographer suggested.

After examining the *Retrievilist* software, the students and I decided

that it would be appropriate to adopt the following headings for the subject fields: Buildings, Costumes, Entertainments, Transport, Work, People, Animals and Art. Whilst the initial intention had been to use images from the History Van collections for the prototype, during the construction of the initial programme Ashley and Jones established that these images were, in effect, "too" similar. Furthermore, the written descriptions accompanying each of the History Van images were inadequate for the purposes of this project. The students established that too many images were linking to one another, effectively making the process non-productive and ultimately meaningless. Whilst the students subsequently decided to use images from the photographic collections, due to a number of unforeseen circumstances, it was not possible for the Library staff to provide these with the appropriate information in the time required. The students therefore used copyright free images from a commercial library in order to demonstrate the mechanics of the interface created.

Having completed the "*Time Machine*" prototype the students initially expressed a desire to continue with the project in order that it might be included in the *Coming to Light* exhibition. However, Ashley and Jones subsequently felt that because the Library lacked the necessary financial resources to develop the project further, it would be appropriate to leave the interface in its limited prototype form. Peter James concurred with this view and, because of their success, invited the students to assist with the proposals for the *Coming to Light* project. Although Jones later entered full time employment as a designer of interactive software, Ashley continued to work closely with the author and the Birmingham Library Service with the *Coming to Light* proposals.

4.5 Coming to Light Web Site

The organisation of the *Coming to Light* exhibition began in the winter of 1995. This degree of planning was necessary as the exhibition was a collaborative venture with Birmingham Museum and Art Gallery (BMAG), which identifies its gallery activities two years in advance. The theme of the exhibition addressed issues relating to the interpretation and classification of photographic images. The Head of Photography at the Central Library wished to demonstrate the significance of both the Library's and Museum's photographic collections and to exploit the publicity generated by the 1998 *Year of Photography and Electronic Image.* During the initial planning James was also interested in using digital technologies to provide the public with an insight into how photographic images may be disseminated in the future.

As a client of West Midlands Arts (WMA), Birmingham Library Services had to fulfil specific criteria in order to realise the digital component of the *Coming to Light* exhibition. When considering the Library's application for funds for this aspect of the project in the spring of 1996, officers at West Midlands Arts indicated that the BLS would be required to adopt a strategic approach when undertaking activities with other grant maintained photographic organisations in the region. Responding to these observations, James suggested that information about such organisations could be included within the scope of the digital component of the exhibition. James successfully proposed that half of the material could deal with the Library's work, whilst the remainder could provide information about the agencies identified. The funders also agreed with James' proposal that I should be responsible for this aspect of the project. During these discussions James became aware that staff at one of the organisations identified by WMA, Photopack, were also undertaking research into the viability of establishing

on-line information provision about photographic resources in the region. As a client of West Midlands Arts Photopack have been active in Birmingham since the early 1980's, working primarily within the education sector, achieving a considerable degree of success facilitating and promoting photographic projects within often marginalised communities. When Photopack's research came to his notice, James felt that it would be expedient to exploit the Library's close links with the organisation and to embrace Photopack's initiative with the telematics component of the *Coming to Light* exhibition. James had informed Photopack about my research and had suggested that a joint proposal be made to *Assist* in order for the *Coming to Light* exhibition to be represented on the World Wide Web. By July 1997, Jurgis Lucas, Photopack's Co-ordinator, had taken on responsibility for what evolved to be an on-line Directory, whilst the initial brief had been finalised by the author with James' approval.

Brief

Because of persistent doubts about *Assist*'s ability to host on-line material - many decisions within the City Council relating to the control of the *Assist* project had still to be resolved - James and I subsequently concurred that despite the initial intentions, the *Coming to Light* digital project should exist primarily in an off-line, stand alone, form. Any on-line initiative would exist as a secondary resource. It was therefore proposed that David Ashley and Matthew Jones would develop the pilot interface in order for it to be used as the off-line digital component of the exhibition. James and I felt that it would be appropriate to represent the images presented in the exhibition in a multimedia component. The initial brief also suggested that the installation should include both specific information about the Birmingham Library

Services collections, in addition to background information relating to the implementation of digital technology within libraries generally.[5] In order to fulfil the WMA funding agreement a discrete section with information about other photographic organisations would also be provided. It was envisaged that the Local Studies and History Department would be required to purchase a suitable kiosk and hardware to run the off-line installation and a sum had been identified within the exhibition budget for this purpose.

Evolution

Although the initial brief included a detailed production schedule this was to be severely affected by a number of unforeseen events. In the earlier stages of the project James became seriously ill with pneumonia: his absence disrupted the selection of the exhibition material and the production of the transparency copies of the images. These delays impacted on the production of the exhibition catalogue and the digital project. Whilst the schedule for the project was affected by James' illness, the amount of material collated by Lucas surpassed initial expectations. The length of copy eventually provided by James was also greater than that initially envisaged. These factors, along with a series of difficulties associated with the *Assist* project, influenced the production of the electronic *Coming to Light* initiative, which was not realised until just a few hours before the exhibition opening on 16 September 1998.

Although it had been decided that the digital component of the *Coming to Light* exhibition would exist primarily as an off-line project, by late summer 1997 it appeared that it would infact be possible for material to exist on-line. There were two reasons for this change in emphasis. The *Assist* staff gave an assurance that they would be able to facilitate the project, whilst the designers had expressed a desire not to develop the existing interface but to undertake a

5 See Appendix 4

new initiative for the exhibition.

Representing *Assist*, Andy Mabbett, who had by now been joined by a colleague, Des Farrington, articulated their willingness to participate in the *Coming to Light* project at a meeting with the author at the Central Library on 23 July 1997.[6] This meeting was also attended by Peter James, and the Photopack representatives, Jurgis Lucas and Yasmin Baig. (In the New Year Baig took up a position with the City Council as an Arts Access Officer and was no longer involved in the project). Indicating their support for the project, the *Assist* staff responded favourably to the concepts outlined. Suggesting that they would like to see some form of interactivity in the digital provision, the *Assist* staff suggested that any kiosk within the Museum and Art Gallery should be on-line. Mabbett and Farrington explained that they were in a position to support the project because of the changes that had recently occurred with *Assist*. The *Assist* office was based within the Central Library, although its remit remained city wide. The Library's Internet Officer, Anthony Blagg, was responsible for the Library's internet material. Mabbett and Farrington explained that it was hoped that other City departments would have dedicated Internet Officers, who would liaise with them. Furthermore, the *Assist* pages were being moved from the Birmingham University server to the City's own server, which in turn was to be connected to a council wide intranet.

The development of the intranet was infact to impact adversely on the creation of the *Coming to Light* material. Lotus Notes had been adopted as the primary authoring software within the Council. Mabbett suggested that the *Coming to Light* designers should create content with Lotus Notes, as opposed to converting material previously created in HTML. These factors would ultimately impact on the design of the material produced. Mabbett also indicated that the contents should embrace the corporate design guidelines

6 See Appendix 5 for an account of the meeting

created for *Assist* - as a minimum requirement the *Assist* logo should appear somewhere on each of the *Coming to Light* pages.

Having been given the assurance by the *Assist* staff that the digital element of the *Coming to Light* exhibition could infact exist on-line, the author and James sought the advice of David Ashley and Matthew Jones. Due to the success of the pilot interface project, James concurred that it would be appropriate to offer the contract of creating the *Coming to Light* web site to Ashley and Jones, who had graduated and were now undertaking freelance work. Although expressing their willingness to continue to work with the Library, Jones and Ashley explained that it would not be feasible to develop the pilot project into the *Coming to Light* provision. Because of the distinct requirements of any on-line provision it would be necessary to re-write the entire pilot programme. Nevertheless, elements of the design of the pilot project could be incorporated into any subsequent initiative if this was felt appropriate.

By the spring of 1998 the contents of the web site had been clarified and the production team established. The individuals involved in the final version of the web site were those identified during the project's initial stages, except that David Ashley worked alone as the designer and programmer - Matthew Jones had taken up full time employment as an interactive designer The task of collating the material for the Directory component of the project was undertaken by Jurgis Lucas. The author took on responsibility as Project Manager, acting as the main liaison between the various partners.

The *Coming to Light* site consisted of two main components. James provided information and images relating to the exhibition, whilst Lucas provided material for the on-line Directory. Lucas successfully contacted over eighty organisations involved in photography in the west midlands, including

media centres and educational establishments. Having received handwritten replies from each organisation, Lucas compiled the separate entries into a standard form, prior to e-mailing this material to the author for final editing and correction. The revised version was subsequently e-mailed to David Ashley who was responsible for the design and realisation of the project.

Whilst Lucas compiled the material for the Directory during the summer of 1998, James forwarded material relating to the exhibition to David Ashley. Ashley devised a method of accessing the large amount of material held on the site and created the design specifications for the screen display. However, five days before the launch of the *Coming to Light* exhibition, the *Assist* staff indicated that despite previous assurances they were experiencing difficulties formatting content with the Lotus Notes software. They informed the project team that the new version of *Assist* would not be in operation for at least four weeks after the exhibition opening. Because of the necessity to have the digital material represented at the exhibition launch James authorised the release of additional funds in order for the content to be re-programmed in an off-line form . This work was undertaken over the weekend of the 13th and 14th September, two days before the exhibition opening. David Ashley was also able to create an on-line version of the site using his server via a link from the *Assist* pages.[7] This site benefited from the use of Flash software, which enabled the on-line content to be viewed and accessed in real time, without the delay often associated with downloading large files.

7 www.in-site/comingtolight/flash

Summary

The *Coming to Light* project highlighted a number of issues relating to the practical application of on-line and off-line information communication technologies. As is indicative of a publicly funded project, the *Coming to Light* initiative involved the agreement and participation of a number of strategic partners. The project was made possible by the support of the officers of the Regional Arts Board, who influenced the content of the material by indicating that the Library should support other photographic organisations in the region. The initiative itself was a component of the *Coming to Light* exhibition, a collaborative venture between Birmingham Library Services and Birmingham Museum and Art Gallery. It was therefore important to promote both of these institutions appropriately. The management of the project was also influenced by the perceived requirement to work with the *Assist* project. The difficulties that subsequently arose as a result of the participation of the *Assist* staff raise a number of important issues relating to the production and control of on-line provision within local authorities.

The requirement to create an off-line version of the *Coming to Light* material at very short notice was brought about as a direct consequence of the problems experienced by the *Assist* staff in converting material for the Council's own server. These problems appeared to be exaggerated because the *Assist* staff had no effective procedures for working with independent agencies, whether content providers, designers or programmers. In hindsight it would appear that the *Assist* staff should have either drawn up detailed specifications for the production of material by outside agencies or, alternatively, insisted that the content was created by officers within the City Council through the application of the intranet and the Lotus Notes software. If the second option were to be pursued, creativity in the design and

dissemination of content would probably be lost, as non trained staff would have responsibility for this task. This in turn would influence the perception of the City department represented. Poorly designed web content would have a counter productive effect, undermining any benefits associated with the use of telematics. Furthermore, the requirement to consult a centralised entity such as *Assist* can be obviated by disseminating on-line material through a commercial internet service provider. If discrete departments choose to disseminate content in this way clear policy guidelines have to be established in order for the material to conform to any corporate requirements. These options raise an important dichotomy in relation to the dissemination of on-line provision by local authorities. Material created by non specialised staff might appear badly designed and homogenised, whilst content created and disseminated by commercial companies might lead to duplication and varied aesthetic values.

The *Coming to Light* project demonstrated the importance of creating a clear and unambiguous brief. Although the project was experimental in nature - it was the first time the BLS had used telematics to promote its work alongside an important public exhibition - it is clear that content should be clarified prior to the production process. The problems encountered by the designer in the latter stages of the project were compounded by the amount of material provided by both James and Lucas. Whilst to some extent this reflected the enthusiasm and commitment both had to the project, it impacted on the ability of the designer to manage the material in the relatively short time available. This pressure was reflected in a number of typographical errors and omissions.[8] Whilst material can be amended at a later date this requirement has an impact on funding. A failure to undertake rudimentary maintenance of on-line content can have a negative effect, with users

8 For a detailed analysis of the importance of data integrity and the necessity of provision for error correction in the creation of database information see BEUTLER, E. Assuring Data Integrity and Quality: A Database Producers Perspective" *in* BASCH, R., (ed) (1995) *Electronic Information Delivery: Ensuring Quality and Value.* Aldershot: Gower. pp.59-69.

frustrated by outdated or missing content.

4.6 Images of Transition

The fourth initiative I instigated came to be known as the *Images of Transition* Project. The intention of the project had been to explore the possibility of the Library undertaking work with dispersed communities, exploiting the ability to transfer photographic images as digital files over local and global networks. During the author's induction at the Central Library, the Community History Development Librarian, Richard Albutt, agreed that it would be worthwhile to undertake a project with other library authorities, either within the United Kingdom or abroad. The material collected by Albutt and his colleagues with the History Van had not been exploited in any significant way and a decision was therefore made to utilise these resources in order to examine the possibility of disseminating material collected locally, globally.

Brief

The intention of the *Images of Transition* project was that the Library would undertake work with ethnic groups in Birmingham.[9] There were two reasons for this decision. A number of groups remained under represented within the History Van archive, whilst the possibility that the material collected might reach a global audience made the project relevant to those identified. The proposal I subsequently devised examined the acquisition of photographic memorabilia specifically belonging to the non-indigenous inhabitants of Birmingham. The proposal also supported the efforts made by the Community History Development Librarian to develop links with the

9 See Appendix 6 for a copy of the draft paper

elderly in day centres and other places of care. It was also envisaged that the proposal would supplement the work undertaken by the Library in supporting the practice of photographers representing ethnic groups by providing historical photographs taken by, and of, such groups within Birmingham. The proposal sought to exploit the characteristics of telematics identified by Levinson, who suggests that the "global village" cited by McLuhan in the early sixties

> consisted entirely of voyeurs, not creators of information ... (in contrast to today) the real village consists of denizens who are senders as well as receivers, who participate in its communication and community on many levels. By that criterion the on-line community is the first true global village.
>
> (Levinson 1997: 129)

By using the capabilities of the World Wide Web to view and transfer images digitally participants would be able to interact both locally and internationally. The project would lead to unique and otherwise unrealisable communications between the owners of the photographs in Birmingham and their contemporaries residing in other parts of the world. Such interactions would provide a unique insight into the significance of the images, leading to a critical appraisal of material that has formed an important component of the Library's photographic collections in recent years.

Evolution

After defining the parameters of the proposal, in December 1997 the author and the Community History Development Librarian wrote to 80 organisations identified in the *Directory of Black and Ethnic Minority Organisations in Birmingham.* Although it had been agreed to include a colour leaflet giving details of the History Van with the mailing, Albutt inadvertently omitted this. Explaining the aims and scope of the project, the letter invited interested recipients to reply using a tear off slip.[10]

By the end of January 1998, the Community History Librarian had received just two responses. Having decided the project should involve around ten groups - any more would be problematic logistically, whilst any less would be under representative - the Community History Development Librarian and I attempted to telephone each of the organisations identified. This exercise also yielded few positive results. In many instances difficulties arose when attempting to explain the purpose and technical aspects of the project. In March the author and the Community History Development Librarian sought the advice of the city's Equalities Department. The department's representative suggested that the Library set up a series of workshops to explain the operation of the History Van and to publicise the *Images of Transition* project. The officer also stressed that it was important that the Development Officers within each of the communities sanction the initial proposals. Unfortunately, the officer failed to make contact with the Community Development Officers and the project did not move forward.

10 See Appendix 7 for a copy of the letter sent to prospective participants

Summary

By the autumn of 1998 little headway had been made with the *Images of Transition* project. The Community History Development Librarian had begun work on the *Digital Histories* project, which, with collaboration with Birmingham City Museum and Art Gallery, aimed to use software provided by Integrated Consultancy Services Ltd to present key maps, photographs, drawings, plans and related documents relating to the history of Birmingham in an interpreted context.[11] Meanwhile my commitments with the *Coming to Light* project had also impacted on the initiative. A decision to assess the limited progress of the project was therefore made, with the view that the Library might resurrect the initiative or a similar proposal at a later date.

A number of observations can be made as a result of attempting to undertake the *Images of Transition* project. Despite the potential of emerging technologies to allow communication to enhance understanding amongst disparate communities, it is nevertheless necessary to facilitate access to the technologies utilised. The trust of individuals and organisations has to be gained before such work can happen; in the earlier stages of the *Images of Transition* project this did not occur. Indeed, the initial correspondence, printed on official letter headed paper and written in English may have had a detrimental effect in gaining the support of some of the groups identified. In retrospect it should have been realised that additional resources and expertise would be required for material to be translated in order for contact to be made with prospective groups. Furthermore the letter was sent during the Christmas period - it arrived when many organisations were not meeting or open. Where the correspondence did reach its intended recipient the

11 The Digital Histories initiative has been described as "an ambitious project with planned development in phases. Likely to take at least ten years to complete, it is probable that the project will be migrated to new hardware and software platforms during that time. The project will provide content for the City's Internet site and perhaps for the cable network. Other products (possibly CD-Rom) may be developed for schools and colleges. The main target audience of people interested in local history will be reached through the libraries and museums" (Parry 1998: 49).

impression created of the Library Service by the omission of History Van leaflet cited in the letter would not have been helpful. During the planning of the project the amount of time required to make contact with individuals and organisations was clearly underestimated. Telephoning prospective participants and arranging and undertaking one to one meetings was, however, an essential aspect of the project. Although some groups simply did not wish to become involved in the project, it is also likely that many of the organisations contacted had no experience of the technology described and the purpose of the project would not have been understood.

4.7 Conclusion

It is possible to draw a number of conclusions as a result of undertaking the empirical components of the research. Untried ways of working will inevitably create unforeseen problems. The somewhat fundamental problem of parking the History Van, for example, was not envisaged when the vehicle came into service. This difficultly would not justify withdrawing the Van from use and the problem has to be overcome by adapting the work undertaken. It is clear that a flexible approach has to be adopted when considering the use of information communication technologies, whilst advantages of using such technology are often countered by a corresponding number of disadvantages. Furthermore, it can be difficult to evaluate the use of such technologies. Although it is immediately obvious whether or not the History Van can be parked, it is not easy to establish whether a web site is of particular benefit to an intended audience or if an interface can be negotiated by a particular group.

The empirical projects have highlighted a number of logistical issues

relating to the use of information communication technologies by the Birmingham Library Service at the time. Birmingham City Council had not put in place procedures to enable individual departments to publish material on the World Wide Web. The creation of the *Coming to Light* web site became complex precisely because the Library attempted to work with the *Assist* team to realise the project. Despite aspiring to devolve responsibility for internet content, the *Assist* staff appeared to have no effective systems in place nor a clear set of guidelines for city officers. Some of the difficulties associated with the creation of the *Coming to Light* site resulted from the Council's use of Lotus Notes software for the creation of on-line content. It is probable that the use of this software will have a significant effect on the material disseminated. It is likely that content will appear homogenised, with the graphical design and structure of the material dictated by both the limited capabilities of the software and the abilities of the non trained staff. In addition, if the *Assist* staff continue to fail to provide adequate support, it is more likely that individual departments will by-pass the Assist project and disseminate content using commercial internet service providers. Indeed, the organisers of the 1998 *Birmingham Readers and Writers Festival*, funded jointly by Birmingham City Council Department of Leisure and Community Services and West Midlands Arts used the internet service provider (ISP) Pipex to host the Festival web site, with the posters displaying www.dialspace.dial.pipex.com/readers.writers/ as the site's URL. Because on-line technologies allow material to be distributed in this way it is important that local authorities such as Birmingham adopt clear and unambiguous policies in relation to the creation and control of material disseminated via the World Wide Web .

A number of the issues that became manifest as a consequence of undertaking the empirical projects related to the skills and abilities of the personnel undertaking the work. The *Coming to Light* project highlighted

weaknesses in the abilities of the staff responsible for the *Assist* site. Furthermore, although it is important that projects are facilitated by individuals with adequate expertise, it is equally important that staff with highly specialised skills and abilities do not take on responsibility for mundane and time consuming tasks. Scanning the Birmingham Library Service's photographic collections became onerous for the staff involved because they were undertaking repetitive and laborious work. Although digitising photographic ephemera is a highly skilled technical process it is not appropriate for this work to be undertaken by experienced library personnel. The *Images of Transition* project, meanwhile, highlighted other skills required to facilitate projects using information communication technologies. Despite the illusion that the use of ICTs' enable intercourse between communities to occur instantaneously, the *Images of Transition* project demonstrated the importance of mediators with the experience and sensitivity to undertake vital development work. Telephone calls still have to be made and letters written - mundane, time consuming but nevertheless essential tasks if such projects are to succeed. Where this mediation is to be undertaken by library personnel it is essential that staff are given adequate resources and time to undertake such work.

The practicalities of undertaking the panoply of duties associated with the use of information communication technologies would indicate that library authorities should consider the appointment of specialist staff with dedicated responsibilities for developing this area of work (Hayworth Jackson 1985). It is clear that if the role of staff in the employment of public libraries is to change, it is essential that the purpose of ICTs' within such institutions is clearly defined. Dutton concurs with those that argue that the role of libraries could be changed radically if they take on responsibility for providing access to communication resources (such as e-mail) as many users

appear to wish.[12]

> (Early) visions of the public information utility were based on the assumption that the public is interested in information. Infact, many assume that the public is composed largely of avid information seekers. However, this assumption might well be a misleading guide to the development of services. Experiments with electronic services have reinforced an observation made by many involved in the early market trials of videotext services, which is that the public might be more interested in specialised services and in communication than information per se.
>
> (Dutton 1998: 79)

Many of the practical problems highlighted by the empirical projects have arisen because the technology employed is constantly evolving. Despite the criticisms that can be made, many projects undertaken by local authorities in recent years have been experimental in nature, building on projects that have themselves originated from experimental beginnings. Any weaknesses in the management of the *Assist* project, for example, are directly attributable to the fact that the project has evolved organically from a pilot initiative undertaken by the City Council's Economic Development Department. With the rapid pace of the adoption of information communication technologies, it is perhaps inevitable that staff have been facilitating their use more as a consequence of historical precedent than by design. Furthermore, the innovative (but nevertheless time consuming) work undertaken by the library staff in developing the *Archivilist* and *Retrievilist* packages was undermined when powerful commercial software came onto the market. However, in terms of acquiring new skills and knowledge the work undertaken with the development of *Archivilist* and *Retrievilist* was nevertheless invaluable. That these skills have never been

12 See also HOOPER, R. (1985) Lessons from overseas: the British experience *in* GREENBERGER, M. (ed) *Electronic Publishing Plus*. White Plains,N.Y: Knowledge Industry Publications.

employed to create a viable photographic database is indicative of the problems associated with engaging with technologies that are constantly evolving. Those responsible for the procurement and management of digital photographic technologies within the public library sector are, as elsewhere, required to address a range of problems caused by technology being constantly eclipsed by "better" technology.

Whilst the empirical projects aimed to identify practical issues relating to the adoption of information communication technologies, the experimental and multifaceted nature of the work meant that the projects were shackled to the individual agendas of the participants. What emerged, therefore, were hybrid projects, fulfilling the objectives of the protagonists involved. This impacted on the final product as each participant aimed to utilise the project to fulfil individual requirements. For example, the collaborative nature of the *Coming to Light* web site meant that the final product emerged mainly as a consequence of the participants undertaking a number of self directed initiatives, as opposed to responding to a clearly defined brief. The large number of organisations represented in the Directory was a direct consequence of the tenacity and enthusiasm of Jurgis Lucas. David Ashley, meanwhile, adopted the Flash technology to disseminate the material on the World Wide Web in order to experiment with the capabilities of this particular software. The experimental nature of the project meant that the initial brief did not state that eighty organisations should be represented in the Directory or that Flash technology should be used.

In many respects the *Coming to Light* web site project was indicative of the other ICT projects undertaken by the Library in recent years - it emerged organically from an undefined brief. If the staff at the Library are to make progress in relation to the adoption of digital photographic technologies there is an argument to suggest that they should now stop undertaking

experimental work and decide on clear policies and strategies. With the range of work that has been undertaken in recent years it should be possible to draw conclusions from the experience gained. It is also possible that the Library should not undertake to digitise any of its photographic collections because of (not despite) the work that it has undertaken in this area in recent years. Whilst this option may seem contrary to the main thrust of of the staff's efforts to date, as has been discussed in the previous chapter, other institutions (notably the National Railway Museum) have set a precedent in this respect.

Whilst this chapter has demonstrated that the experimental adoption of digital photographic technologies has informed the Birmingham Library Service staff about their possible use, it is apparent that much work needs to be undertaken with potential users. The degree of knowledge about such technologies by the general public should not be overestimated. It is clear that the Library has to provide a clear educational programme alongside any developments in this area. Education about the use of such technologies, providing a clear understanding about their purpose, is essential if individuals are to have a sense of ownership of future projects facilitated by the Library. Staff at the Equalities Department at the City Council stressed the importance of community representatives sanctioning any participation in the *Images of Transition* project. Whilst this may have seemed time consuming and unnecessary, leading to delays, it demonstrated an important principle that those who control digital technologies would be wise to adopt if they are to engage with communities on mutually acceptable terms. Education is essential if individuals are not to feel threatened or exploited by the use of technologies they do not understand. Because projects using digital technologies have historically been sanctioned by those working in positions of authority or power (albeit, the relatively limited authority associated with a public library service) the perception felt by many in the community may be

that the use of such technology is offered in order to fulfil the needs of others. Future developments must ensure that the Birmingham Library Service aims to assist in the generation of digital projects by and within local communities, as opposed to imposing such projects from a centralised position.

This chapter has also demonstrated that whilst in general the personnel at the Central Library have demonstrated a willingness to engage with digital technologies, the lack of dedicated staff has impacted on the processes involved. Such problems have been compounded by the rapid evolution of the technologies themselves: new products are continually evolving and coming onto the market. Furthermore, as is indicative of the public sector, the requirement "to address principles such as the equitable treatment and allocation of resources according to need" (Flynn 1993: 12), has inevitably influenced the speed at which the various digital projects undertaken by Birmingham Library Services have been implemented.

The following chapter goes on to consider a range of issues that those with influence within the BLS must consider when utilising digital technologies for work undertaken with the photographic archive. As Mitchell implies, with an archive the size of that within the domain of the Birmingham Library Service, the twin tasks of appropriating digital technologies, along with considering the roles of those working with the images contained, need to be considered very carefully, as

> ... computerised image databases can easily become orders of magnitude larger than traditional slide libraries and photo archives. Consequently we face new problems of sheer magnitude - of finding efficient ways to browse and navigate through these vast visual collections, of sifting out what we want from the effectively infinite number of images deluging us through electronic channels, and, most importantly, of dealing with the social, political, and cultural implications of image accumulation at an unprecedented scale.

> Social practices organised around image collections will change, and the role of archivists, librarians, preservationists and library users will be redefined.
>
> (Mitchell 1994: 83)

Summation

In summary this chapter has outlined the following points:

- The Birmingham Library Service has used a number of information communication technologies to facilitate work with its photographic collections since the early nineties.
- As part of this research the Birmingham Library Service has created links with the city council telematics project, *Assist*. In the first instance this led to the creation of a pilot web site.
- When formulating projects, both with and without the use of information communication technologies, the Birmingham Library Service staff sometimes have to consolidate the often conflicting demands of its various funding agencies.
- The widely acclaimed *Coming to Light* exhibition represented the first use of telematics by the Birmingham Library Service to disseminate photographic content and associated ephemera.
- The *Images of Transition* project failed to move beyond the preliminary stages partly due to a lack of mediation undertaken by the Birmingham Library Service staff.
- Conflicts can sometimes arise between the *communication* and *informing* role of library professionals.

The substantive implications of these points I believe are as follows:

- Although arguably ahead of their time, the practical projects undertaken by the Birmingham Library Service staff have to date been largely unsystematic and non conclusive. I would recommend that this valuable period of experimentation now ends and specific, tangible goals now need to be set where appropriate.
- The Birmingham Library Service can confidently build on the successes of past projects undertaken with information communication technologies.
- Personnel must consciously recognise that the separate remit's of the Library's various funders has an impact on the content of the projects they propose and strategies must be devised in order to offset some of the tensions that consequently arise.
- Staff must recognise that whatever their perception, the use of information communication technologies requires a high level of mediation between themselves, the technology and the communities with which they are working.
- Clear policies should be devised where ambiguities exist between the *communication* and *information* role of libraries.

CHAPTER FIVE

DIGITAL TECHNOLOGIES AND THE BIRMINGHAM LIBRARY SERVICE

5.1 Introduction

This chapter examines the Birmingham Library Service's use of those digital technologies which may have an impact on the range of work undertaken with it's photographic resources. Issues and themes explored in the earlier components of the thesis are brought together and considered. **Chapter One** examined the context in which the photographic work at Birmingham Central Library is undertaken: the history and role of the public library were analysed in order to provide an overview of the function of the service and its position at the beginning of the twenty first century. **Chapter Two** considered aspects of the technology that is impacting on the way in which photographic images are created, stored, disseminated and viewed. The third and fourth chapters described the context in which the research was carried out, along with empirical evidence relating to the capabilities of digital technologies. This chapter provides a focus for the preceding material by critically analysing issues at stake for the staff at Birmingham Central Library when appraising the implications of using digital technologies.

This penultimate chapter is in four sections: *users*; *funding*; *production* and *mediation*. The content and structure of the text has been informed by examining issues which are of particular relevance to the staff at the Central Library. Others have analysed those components of the digitisation process involving photographic materials that require consideration in terms of both resources and time (Ostrow 1998, Kenney and Chapman 1996, Parry 1998). Parry has suggested the main aspects of the digitisation of photographic materials that staff in local authority libraries and archives should consider. These include the selection of material; copyright issues (including the identification of rights owners and the acquisition of clearance); selection and

installation of hardware and software for data capture and for retrieval systems; data capture; cataloguing and indexing and document and file management (Parry 1998: 42). The structure of this chapter has been informed by considering both the requirements of digitisation identified by Parry et al along with the specific needs and aspirations of the users and staff at the Birmingham Central Library.

In considering the abilities and needs of the users and staff of the Central Library, this section has also been informed by the Birmingham Library Services own internal document, *Birmingham Library Services ICT Strategy 1999 - 2001.* This chapter shares the philosophy of this document in that it too "... tries to place ICT, not on its own as a technological phenomenon, but firmly within the overall strategic aims of the library service .... the starting point for (which) is the customer and their needs for information and learning" (Birmingham 1999: 7). In addition, the *ICT Strategy* describes how a number of issues will be approached by those within the BLS, including plans to

> Develop computer networks which will enable libraries to become hubs of the information and learning community, connected by high-speed networks to services and resources: Use ICT to meet demands for access to information and learning: Respond to the challenges presented by the need for major staff reskilling: Develop new content and services: Manage and resource these processes in an effective and efficient way.
>
> (Birmingham 1999:4)

The material that follows therefore reflects the specific needs of the Birmingham Library Service, identified in part by the *ICT Strategy*, with those of libraries and archives generally, articulated by Parry and others.

In summary, after identifying how and which *users* might benefit from

the adoption of information communication technologies, the chapter considers *funding*. The use of digital technologies through the *production* of bespoke and off the shelf software and hardware requires staff to consider a range of issues relating to the practicalities of the digitisation process, including the selection and procurement of such hardware, the design of resources for public use and the creation of metadata. The effective use of both off-line and networked electronic resources would require *mediation* along with some degree of training for both users and staff. The rights of the library and the photographers represented in any digital resource would need to be secured through the consideration of current legislation. This chapter analyses each of these issues and offers conclusions as a result. The substantive recommendations put forward as a result of undertaking the research are made in the following, final, chapter.

An important aspect of the *ICT Strategy* is the perceived longevity of current and future plans being considered by the management of the Birmingham Library Service. The *ICT Strategy* itself is intended to be durable for three years - to the end of of the year 2001. This is important because it is likely that any discrete activity devised around the use of digital technologies with the photographic archive would be affected by both the implementation of the strategy and the external influences it cites. The authors of the *ICT Strategy* state that it only has relevance to the end of the year 2001

> ... because a) political programmes which influence the strategy are geared toward the year 2002; b) funding regimes such as the New Opportunities Fund are in line with the same cycle; c) attempts to predict the direction of technological change beyond the year 2002 are almost inevitably destined to fail.
>
> (Birmingham 1999: 7)

The *Birmingham Library Services ICT Strategy 1999 - 2001* has provided a significant and timely context to the material that follows by offering a number of insights into the work undertaken by the Birmingham Library Service with ICTs' to date. The document states that

> ... the management and provision of services will change fundamentally, but we must avoid the mistake of considering electronic information resources to be a replacement for the printed word. They are not, and most certainly our customers do not consider them to be so. Our core asset is the information we hold, not the ICT, which is increasingly the gateway to some of that information.
>
> (Birmingham 1999: 23)

It is significant that the term "printed word" has been used in this context. This is important in that it appears to demonstrate the priorities of those personnel with overall responsibility for the procurement and implementation of information communication technologies within the Birmingham Library Service. There is, after all, no mention of the library's other "core assets" - not least its extensive photographic collections.

Acknowledging that "strategies for making services and resources available on worldwide and local networks are essential...." the document is also important in terms of what follows in this chapter by stating that "... we are beginning to move from a piecemeal approach, where isolated examples of good practice showed the way ... and towards an approach which is more systematic and purposeful, with clearer strategic direction..." (Birmingham 1999: 24). The authors of the document go on to claim

> There is now a business vision to the direction our ICT development is taking, one in which the key elements are the customer, learning and access to enhanced resources and

> information discovery within a broad framework at local, regional, national and global levels.
>
> (Birmingham 1999: 28)

In recognising the fragmented manner in which work has been undertaken by library personnel in this area, the strategy demonstrates that the BLS faces significant challenges if it is to implement viable ICT policies. The work carried out with digital technologies by the library to date, including those projects instigated by the author, have been essential in demonstrating the possibilities of the media and providing examples of "good practice." It is clear that the empirical projects undertaken by the author as part of this research were in many respects ahead of their time and highly innovative within the context of the Birmingham Library Service's work. This point is reflected in the strategy where it considers *"Content and Service Delivery (and) Web Page Development."* Here the document states that

> ... progress (in this area) has been largely based on opportunism and shows no overall strategic approach ... (whilst) ... a more comprehensive web presence must be developed which provides real support to users seeking resources.
>
> (Birmingham 1999: 56)

It is important that those with responsibility for the procurement and introduction of information communication technologies within the BLS are successful in their endeavours. As those commentators cited in **Chapter One** suggest, the Birmingham Library Services, offering as it does a range of services and resources, is, like comparable institutions both in the UK and abroad, extremely powerful both as an agent for social change and as a product and shaper of political influence. In attempting to utilise ICTs' in order to provide "real support to users seeking resources" staff within the

BLS have to acknowledge that these users represent all sections of the community, with discrete needs and abilities. Moreover, the ability to disseminate materials beyond the traditional catchment area of the library will require staff to consider very carefully how resources are employed and at perhaps what cost to the traditional library user, who will continue to wish to gain access to physical artefacts within the environment of a library building. Furthermore, by employing technologies that allow facsimiles of materials to enter the public domain that might otherwise be constrained to the restrictive confines of the archive, personnel face a number of complex decisions when selecting and choosing material for digitisation.

The personnel at the Birmingham Central Library are not unique in failing to engage with digital photographic technologies in a "systematic" and "purposeful" manner. Cawkell suggests that in the past this tendency has been compounded by the failure of those responsible for collections to engage with the developers of digital systems, stating that "... there is some evidence to show that the imaging fraternity probably do not talk to librarians/information scientists" (Cawkell 1992: 301). Nevertheless, the albeit "opportunistic" work undertaken by the Birmingham Library Service in this area can provide valuable insights for the future. As has been seen, many within the libraries and archives communities have responded to the opportunities provided by digital technologies by creating "on-line collections which are accessible not only to researchers but to all citizens supporting cultural awareness and identity" (New Library 1997: 5). Such librarians and archivists with responsibility for photographic collections have recognised that the ".. key to the importance and value of a photograph is its visual impact and unique method of communicating information" (Hillyard 1981: 6). Indeed, having considered the extent of public digitisation projects nationally, Parry identified that a significant majority of the local authorities surveyed - some 65% - concurred that photographs of local significance were

a priority for digitisation (Parry 1998: 122). This trend is obviously reflected in the work undertaken with the photographic archive at the Birmingham Central Library, which as this chapter goes on to consider, faces its own unique challenges in responding to the specific needs of its users.

5.2 Users

Any consideration of the employment of digital technologies by users of the archive must be prefaced by one essential and fundamental point: personnel within the Birmingham Library Service do not know who currently makes use of these photographic resources. The library keeps no statistical analysis of user groups. This fact has been highlighted by both Peter James, Head of Photography at the Central Library and by Paul Taylor, a library assistant within the Local Studies and History Department whose responsibilities include processing orders for materials borrowed. This is important because at present those working with the archive have no clear idea of who might benefit from the use of information communication technologies. At a time when the provision of ICTs' continues to be made to citizens by institutions and governments I would argue that it is essential that those responsible for the resources available in public libraries identify the needs of their users. If and when such an audit is carried out then those with responsibility for the implementation of information communication technologies within the Birmingham Library Service will be continuing a process instigated in the early nineties, when, as has been seen, the specific needs of such groups as the young and the disadvantaged were addressed.

Despite a lack of detailed information it is at least possible to establish in general terms who has used the resources in the Local Studies and History section of the Central Library. Orders for photographic materials housed here can be scrutinised. Taylor has noted, however, that management and administrative systems are not shared within the BLS and "... whilst sections other than LSH mainly deal with photographic requests with other City Council departments ... there is no direct relationship between sections." Thus, whilst it is apparent that the majority of requests for images from the archive reflect the research value of photographs as "... an invaluable source of information ... especially where local history is concerned" (Oliver 1989: 8), it is clear that the collections as a whole are also accessed by others for a range of discrete and specific purposes.

The problems associated with understanding who uses the photographic collections held within the Central Library are compounded by the dissipated nature of their storage. Furthermore, James believes that because these resources are both situated on many floors within the Central Library and " ... controlled by many non specialist staff, problems associated with the collective management of the archive as a whole are compounded."

In the absence of clear statistical evidence relating to the use of the photographic collections in their entirety observations about their use must remain anecdotal. Nevertheless, Taylor's identification of the four main groups who use the photographic collections housed within the Local Studies and History Section is in accordance with research undertaken by others. Taylor suggests that the largest group who use the (LSH) archive are members of the public either undertaking "historical research as a hobby or a recreational activity," or who are "... looking for images as part of research around family history, typically sending images as presents to family members abroad." Students are the second largest users of the collections,

who, according to Taylor, "... don't have much money to spend on copies of images." Media and publishing businesses make up the third most significant users of the archive, consisting mainly of television and video production companies along with both small and large publishers. Taylor has suggested that some of these companies "... have very limited resources, whilst others are large concerns like the BBC or are linked to international companies." The fourth group of users identified by Taylor are those "internal" users from other City Council departments.

"Producers" and "Private Users"

The users of the photographic resources cited by Taylor reflect those identified by Fothergill and Butchart who suggest that users of non-book material in public libraries tend to be either "Producers" or "Private Users." "Producers" can be either representatives from institutions or individuals working alone, and both may be local or "national" - based elsewhere in the country. Fothergill and Butchart's description of the "Private User" is reflected in Taylor's observations, as they suggest that such individuals acquire materials for use "... in education, at work or in leisure activities" (Fothergill and Butchart 1990: 28).

It is apparent, then, that although the BLS has no clear evidence relating to the use of the photographs that make up its extensive collections, I would suggest that it may nevertheless be possible to consider the use of digital technologies for the benefit of specific groups with information based in part on principles relating to the use of non-print materials within the institution of the public library.

The Head of Photography believes that to date the use of digital

technologies by the BLS has been "poor" and "ill thought out." James' main criticism is that the use of digital technologies has not been prioritised, either in terms of the benefits to potential users or to the advantage of managing the collections. James' view is that those parts of the collections which are most widely used should be given priority when the use of ICTs' is considered. Whilst this analysis might initially indicate that James is here prioritising the needs of the collections (over and above the needs of the public), it is clear that such an approach would infact be of benefit to the greatest number of users. Although there are range of criteria for selecting which materials to digitise, including its research value, its availability in other formats and the costs associated with the digitisation process, the number of potential benefactors of a digital resource would be established by considering the current use made of specific original materials.

Birmingham Library Service and "competition"

The photographic collections held by the Birmingham Library Service are clearly unique in their size, scope and importance. Nevertheless, existing and potential users of the archive can of course seek to gain access to photographic materials held by other institutions. These institutions are important where users of the archive at the Central Library have the option to gain access to materials within them by either traditional or digital means. James recognises that some "local" users of the Central Library are likely to find materials of interest in both the archives of the Birmingham Post and Mail Collections and at the Warwickshire County Archives and Records Office in particular. Similarly, "national" users may also benefit from using collections housed elsewhere, notably the Victoria and Albert Museum. James believes that in comparison with the BLS, both the Victoria and Albert Museum and the Birmingham Post and Mail are "far ahead" in the use of

digital technologies, as are others, including the Francis Frith Company and the Royal Photographic Society. Furthermore, as would be expected, local libraries and archives divisions in the vicinity of the BLS's catchment area have begun to use ICTs' in recent years. Librarians and archivists in both Sandwell and Wolverhampton, for example, have begun projects to digitise out of copyright photographs (Allan 1999). Such initiatives undertaken both locally and nationally are acknowledged in the *Birmingham Library Services ICT Strategy*, which recognises that the BLS is "... part of a number of communities of interest with whom (it) must interact successfully if services are to be maintained and improved" (Birmingham 1999: 20).

In addition to those "communities of interest" which represent institutions holding photographic collections, the Central Library staff have a a role in promoting photography to a variety of audiences and users. With limited resources, in recent years James and his colleagues have done much to promote the medium both locally, nationally and internationally. (In 1999, for example, James gave a paper outlining work undertaken with the Sir Benjamin Stone collections at the *Encounters with Photography: Promoting People in Southern Africa 1860 - 1999* Conference held at the South African National Museum in Cape Town.) I would argue that if the library staff considered both the uniqueness and value of the collections at the Central Library along with the *strategic* adoption of ICTs', in future they would be better able to complement the work of such institutions as museums, libraries and media centres both in the UK and abroad.

Exhibitions

In addition to promoting photography to audiences outside Birmingham, with no dedicated photography gallery in the United

Kingdom's second city, the limited exhibition opportunities afforded at the Central Library are important. Although since the closure of the Library Exhibition Hall in 1992 the mezzanine floor adjacent to the main area of the public reference section has been used exclusively to show photographic exhibitions, this space is both limited and lacks a high physical profile. Through the appropriation of ICTs' staff at the BLS could exploit new possibilities available to them in order to augment opportunities to exhibit photography - if not by means of a physical venue, then through a series of "virtual" sites and the dissemination of digital media.

User Needs

When considering the use of ICTs' by members of the public, James holds the view that the majority of such users are likely to have the level of skill required to operate such technologies, on the premise that ".... computers are already used in the Library and ... internet access is becoming more common." Nevertheless, as the authors of the *New Library* report acknowledge, it must be recognised that some library users have no interest in engaging with information communication technology. Here I concur with the authors of the *New Library* report who cite the elderly as a group that has expressed particular reservations about the adoption of such technologies, preferring instead that the money spent to procure them is used to improve existing library resources, including, for example, the funding of "... better and more comfortable chairs and longer opening hours" (New Library: paras 2.4 and 2.5).

In providing digital resources the BLS must ensure that the actual needs of its users are considered and that they are empowered by the utilisation of such technologies. Despite the growth in the use of information

communication technologies that has occurred in recent years, the demographic profile of the typical internet user, for example, continues to be unrepresentative.[1] By empowering traditional users - some of which represent groups hitherto denied access to ICTs' (the elderly and economically disadvantaged in particular) - libraries would appear to be in a strong position to counter the dominant presence of existing users of such technology. Moreover, as Jordan has suggested

> ... because of the advantages for individuals offered by cyberspace, access becomes a central political problem. The demographic profile of cyberspace users means access is largely defined as the problem of increasing access for those who are not yet able to go online.
>
> (Jordan 1999: 120)

In suggesting ways of increasing access to those who have yet "to go online," the authors of the *New Library* report have advocated that by providing an "independent and anxiety free" environment, libraries could employ resources in order to teach computer skills and to help overcome "techno fear" where it exists amongst the general public (New Library: para 1.4.5 and 2.5(f)). Against this context staff with responsibility for digital photographic technologies at the Central Library need to consider very carefully the nature of the work undertaken with their users. It is not appropriate to believe that by merely using such technologies individuals are in some way empowered and that their lives are enriched.

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1 Whilst providing statistical evidence that underlines these findings, a MORI (Market and Opinion Research International) survey commissioned by Motorola in 2000 states that " ... five years ago half of all respondents felt they were being left behind by technology, 48% still feel the same today." The British and Technology, Motorola , 2000.

The Relevance of Digital Projects

Citing examples of possible initiatives advocated by exponents of digital technologies, Grundy is critical of the gulf between these and their relevance to everyday life. Grundy is particularly concerned with the needs of women.

> These (projects) were imaginative and futuristic, especially in the areas of information and communication: they included the idea of digitising a million paintings, photographs and images of all sorts. Another example was having any book or text available in written prose, sound or video. But there was nothing to do with domestic work: nothing about child care, shopping, cleaning, maintenance, household accounts, cooking, family diaries - in short, not a single mention of what we know as housework ...
>
> (Grundy 1996: 35)

At a time when (male) staff at Birmingham Central Library are undertaking projects dealing with the digitisation of photographic collections, arguments concerning the validity of such work for all users of the library should be acknowledged and addressed.

In addition to questioning the relevance of much work undertaken with digital technologies, Grundy develops her thesis by noting that because computer technology is predominantly controlled by male protagonists, the result has been the propagation of a technological culture and language that is opposed to female sensibilities.

> (In) literature imagery is used to suggest a wider range of meanings than that implied by the primary meaning of the words. Poetry in

> particular gains a great deal of its power from the undertones and overtones of words in addition to their straight meaning. In the light of this ... words like 'violation,' 'degradation,' 'chaining,' 'abort,' 'kill' and 'execute' (have particular connotations). I even hear colleagues talk of 'squirting data.' The question then arises: What connotations do these words have for female students? 'Abort' may only mean the early termination of a program; on the other hand, it could equally well have the connotation of the abortion of a foetus. We have good reason to suspect that the image that will be created will be antithetical to feminine sensitivities: the language and imagery of male dominated sex and violence is as virulent as ever.
>
> (Grundy 1996: 88)

When considering which users might benefit from the adoption of digital technologies at the Central Library, those responsible for the photographic archive should consider the substance of such arguments put forward by critics such as Grundy insofar as they provide a potential insight into user reactions to technology. No assumptions about a shared empathy with a desire to engage with technologies should be made. Moreover, by offering access to "computers under a protective patriarchal arm and overseeing eye" (Grundy 1996: 38) it must be recognised that those responsible for providing access to digital technologies in public libraries face the prospect of alienating prospective users. In the light of such observations I believe that the assertion that the environment of the public library is "independent and anxiety free" begins to look spurious.

The failure of the *Images of Transition* project demonstrated some of the issues relating to the instigation and take up of projects using digital technologies. The initiative set out in part to explore some of the ideas articulated by Jones (1997), who has suggested that the use of the internet can

> ... make community *better* . It (can) result in a community free of the constraints of space and time, and so free us to engage with fellow humans irrespective of geographic proximity and the clock, and it can construct that community from *communication*, rather than inhabitance and being, which do not guarantee communication.
>
> (Jones 1997:10)

Although well meaning in its intention to advance knowledge about the potential of information communication technologies to a widely hitherto unrepresented cohort of users, the charge that the *Images of Transition* project was both patriarchal and patronising to those it wished to embrace has some validity.

Whilst projects using digital technologies at the Central Library have to date been instigated by male members of staff, perhaps to the detriment of potential participants, these projects have nevertheless benefited from the drive and commitment of the personnel involved. Very much forward looking at the time of their inception, the projects have reflected the genuine interests of the originators behind them. Against this context it has been observed that members of the librarian and archival fraternities (both male and female) are by and large introspective and conservative in nature, typically wishing to eschew new methodologies in favour of traditional practices. As a result of the efforts of a small group of (albeit male) staff, the potential of digital technologies has nevertheless been explored for the possible benefit of all the users of the photographic archive. It remains to be seen whether or not these prospective benefits will offset some of those valid arguments put forward by those cynical about the male control of digital technologies.

The Conservation Department

In addition to examining the use of digital technologies to undertake work with the photographic archive by members of the public, staff within the BLS are continuing to procure such technologies in order to undertake a range of internal tasks. As Head of Conservation at the Central Library Tony Barrett has overseen the introduction of a system which allows staff in his department to use digitised copies of photographs in order to establish which materials have been temporarily withdrawn from the archive (perhaps in order to be exhibited). Here the primary reason for employing such technologies is for collections management purposes. Using the system it is possible for Barrett and his colleagues to ascertain which materials are being held by other venues, where they are and for what periods of time they have been out of the controlled environment of the Library. Since the introduction of the scheme in early 1999, prior to any photographic material leaving the Library a high resolution scan is made. A database is used to record details of the environment in which the item has been temporarily placed in order that future conservators will be able to ascertain where the materials have been shown and for how long. Within the first 18 months of the system being introduced approximately 1000 images had been scanned, whilst Barrett estimates that his department would expect to scan around 200 - 300 images per annum. Such an initiative clearly represents an effective and useful tool for the conservation section within the BLS.

Survey

It is apparent then that having undertaken a number of valuable and informative projects using digital technologies staff at the Central Library

would benefit from ascertaining who is using the photographic collections. This information would allow the personnel at the Central Library to establish which library users might gain from the continued use of digital resources. The primary reason for the failure of the *Photopoint* initiative was that staff were unsure about who would use the *Archivist* and *Retrievilist* software and for what purposes. A survey of the users of the entire archive (across all floors of the Central Library) would provide staff with appropriate information to allow the procurement of any further digital resources to be undertaken in an informed and systematic manner.

Although an extensive survey of the Library's users would be desirable, within the Local Studies and History section at least, where records of orders are retained for five years, a retrospective examination of users would reveal some information relating to the current use of the archive. Whilst these orders contain no information about the user other than their gender, they do contain information relating to the use of the material released. The prospective recipient is required to define the use to which the material will be put in order to establish whether it is for private use, research or publication (including broadcast). At present this information is gathered in order that Library staff can identify if copyright is likely to be infringed. Relying initially on the honesty of the user, library personnel only investigate how the material is to be used if the "publication" box is ticked on the requisition form submitted.

By undertaking a user audit the library personnel would be able to establish the various purposes for which each photographic item is used. These may relate to the photograph's value as evidence, as art, as a historical document or as an image that can be exploited as a commercial artefact. Until such a survey is undertaken some important observations can be made from the evidence relating to the use of the archive offered by members of

the library staff. Paul Taylor's observations appear to reveal an important dichotomy in the use of the archive and the current use of ICTs'. Taylor suggests that the greatest number of users of the archive are members of the public, followed by students, then media and publishing concerns. Internal users from other City Council departments make up the smallest group. It is evident that of these groups, the second, third and fourth are, at present, *most* likely to have the technology to access the collections digitally - despite being the *least* prolific users. Students will have access to off-line and networked services at their place of study. Media and publishing concerns are likely to have a range of digital technologies at their disposal, whilst other council departments can gain access to resources through the City's intranet. Taylor's observations about the use of the material housed in the LSH section are substantiated when the profile of those who utilised the resources procured as a result of undertaking the empirical components of this research is considered. I therefore believe that it would be prudent for those within the BLS to consider the disparity that currently exists between the users of the archive and their ability to gain access to digital technologies.

Further and Higher Education

The evidence put forward by Taylor about the use of the archive by students underlines the general trend towards a greater usage of library resources by both the Further and Higher Education sectors. Whilst some within the library professions (including staff at the Central Library) have expressed concerns about the increased numbers of students using library resources, this trend could be advantageous. To date the Birmingham Library Service has undertaken many varied projects with educational institutions to the mutual benefit of each. (This document is itself, of course, the product of one such collaborative venture.) By putting in place formal

links with educational institutions supportive expertise and knowledge can flow between the Library and the universities and colleges involved. Certainly the academic sector could provide skills and knowledge relating to the appropriation of digital technologies by those in public libraries.

Disadvantages

Although digital technologies can provide many benefits, affording innovative and valuable opportunities, when the needs of its users are considered, staff within the BLS must recognise that the use of ICTs' can also have a detrimental impact on the service that it offers. Potential benefits of enhancing access to information associated with networked services may be offset as librarians and other related professionals become increasingly remote from their users. Furthermore, as a consequence of communicating and liaising with their users at a distance, the authors of the *New Library* report suggest that the performance of librarians will be harder to ascertain.

> In making effective use of 'library' services, end-users will no longer require access only to physical stock. In these circumstances the contact between user and resource is invisible, and library staff may not know who is using which services; they may be unaware of alternative solutions which users find for themselves. The effectiveness of library services is thus more difficult to judge than in a conventional print-based environment.
>
> (New Library 1997: para 7.7)

James believes that when the photographic collections are considered it is likely that the difficulties recognised by the authors of the New Library report will be compounded as staff with more general skills continue to replace those with specialist knowledge about photography and historical photographic

collections. This trend has resulted from the financial pressures faced by the library sector generally. As this chapter goes on to consider, the question of funding digital technologies has created a range of issues for those at the BLS responsible for the photographic archive.

5.3 Funding

Any use of digital technologies by the BLS is of course contingent on the availability of adequate funds. However, just as there is no clear information about the users of the archive, the personnel with responsibility for the resource have yet to undertake a detailed analysis of any economic benefits associated with digital technologies. In the early nineties, when the use of CD Rom was becoming more widespread, library managers did consider producing titles for purchase by the public. However, Brian Gambles, when Head of Bibliographic Services, noted that this policy was not pursued as it was felt that it would be unlikely that " ... local audiences would have the disposable income necessary to purchase such items."

To date the advantages of using individual items of digital hardware and software have only been examined by those at the Central Library responsible for the archive in order to achieve economies in certain areas. For example, the procurement of a Fuji Pictrography system has been considered by library staff because this system allows cost and time savings to be made when copy prints are required. Indicative of the approach taken by the library staff to date, the use of this system has not been integrated into a broad strategy relating to the general use of digital technologies within the archive. It is an individual response to an individual issue.

It is clear that the funding and procurement of digital technologies will require those working in the public library sector to address a number of issues fundamental to the service they offer. Whilst the notion of public funding has been enshrined within the service since 1850, it has to be recognised that digital technologies could provide additional means to exploit library resources commercially. The potential to undertake work with digital technologies in order to generate income must be considered whilst libraries remain susceptible to the uncertainties of public sector funding. Unlike in previous years, the UK public library service cannot rely on the philanthropic benevolence afforded to others. Alastair Smeaton, Deputy City and County Librarian, Dublin Corporation Public Libraries, has recalled how in 1997, for example, the library service received "a major hardware cache" from the Microsoft corporation. Perhaps in part an act of assuagement in response to those critical of its influence, Microsoft selected Ireland on " ... the grounds of its economic profile." Meanwhile, staff within the BLS, as elsewhere, will continue to be required to consider both who benefits from information communication technologies - especially where these users reside beyond the catchment area of the service - and whether or not such services represent so called "core" or "value added" services.

The link between the development of photographic collections in public libraries and the level of financial investment made has been clearly recognised (Fauvel and MacDonald 1981: 420). James has stated that to date the BLS has only been able to invest in the use of ICTs' as part of discrete, special projects. As the *Coming to Light* initiative has demonstrated, however, the fragmented nature of funding for special projects makes any attempt at long term strategic planning difficult. James concludes that such problems have been exaggerated in recent years because of the reliance placed on special projects in the absence of adequate revenue funding generally.

Special Projects

Believing that the digitisation of the photographic collections should be undertaken by being funded independently of the work undertaken with the archive, James nevertheless asserts that it should be possible to successfully integrate digitisation work into special projects. James has advocated that as part of any special project undertaken by the BLS any income generated could be used to subsidise the costs associated with digitising aspects of the archive. In order to maximise the potential benefits that can be derived from the use of ICTs', James believes that it would be prudent to select material for digitisation that has some commercial worth. Furthermore, citing the Sir Benjamin Stone collection "which has immense commercial possibilities," James recommends that in order to perpetuate further digitisation of the archive, any income derived from its commercial exploitation could be used to subsidise the digitisation of parts of the collection which have less or no potential for generating income.

The funding model advocated by James of appropriating the initial funds generated by a special project to facilitate the digitisation of a component of the archive with potential for generating income, (income which in turn would be used to fund the digitisation of aspects of the collection with less commercial viability) appears to be realistic and manageable. As Smith (1999) has stressed, it is imperative that managers within the BLS, as elsewhere, are realistic about the realities of the digitisation process, which often "... raises expectations of benefits, cost reductions and efficiencies that can be illusory ..." It is possible that these expectations are likely to become more pronounced as the costs of the resources required to undertake work with digital technologies continues to fall. The expenditure relating to the hardware for the work undertaken by the Conservation

Department at the Central Library was, for example, comparatively insignificant. A scanner was acquired for approximately £400.00, complimenting a digital camera purchased for around £300.00. Barrett and his colleagues considered purchasing and downloading the software for the project from an American company. The fact that software for use by a large public institution can be procured (at minimal cost - in this instance £40.00) by the disclosure of a credit card number will in future require personnel to consider the way in which such resources are made available to both staff and users alike.

"Efficiencies"

One of the "efficiencies" alluded to by Smith that makes the use of digital technologies appear beneficial is that data in digitised formats occupies less physical space than original items. Certainly the photographic materials housed within the public and segregated areas of the stack within Birmingham Central Library occupy a considerable amount of (costly) city centre floor space. It could be that the space taken up by such collections might be used more effectively in order to provide enhanced and more manageable resources or for services that generate income. If photographic materials are digitised in order to make space available in libraries and archives, the issue then arises of what to do with the original materials once displaced. This question would need to be addressed by the staff at the Central Library if such a strategy was pursued.

The cost of moving and maintaining original materials once digitised perhaps makes the argument for discarding such items more compelling. Kenney and Chapman (1996) have advocated destroying original documents once digitised. Although suggesting that it is appropriate to destroy original

materials, they do, however, acknowledge that there may be " ... reasons for maintaining human readable copy" - in which case the original should be retained (Kenny and Chapman 1996: 23). As discussed in **Chapter Two**, it is arguable that the likely obsolescence of digital formats is a very good reason for not destroying original items - therefore, no materials should ever be destroyed. Kenney and Chapman qualify their suggestions by stating that it is only appropriate to destroy materials which have "no intrinsic value" (Kenny and Chapman 1996: 26). Questions of what constitutes "intrinsic value" aside, it should be remembered that what might not have value today might have intrinsic value at sometime in the future. If, however, it is accepted that certain originals do not have value, then the paradox remains that, apart from the ability to disseminate digital copies of the original artefacts, the purpose of undertaking the scanning process in the first instance remains unclear. The model advocated by Kenney and Chapman clearly supports Smith's ascertain that the digitisation process has " ... the potential to put at risk the collections and services libraries have provided for decades" (Smith 1999).

The model for funding the digitisation of aspects of the photographic collections proposed by James, whether or not this involves the destruction of original items, is contingent on the BLS' exploitation of its main asset - the archive itself. Fopp is unequivocal that the managers of libraries and museums should attempt to gain the maximum advantage from the resources in their custody.

> Unlike any other time ... we now have something with which to sit around the negotiating table and to offer as our capital contribution to major investment. Our assets are our capital contribution and for any financial investor they are worth a great deal.
>
> (Fopp 1997:88)

Fopp's analysis is relevant to the BLS' photographic archives, containing as it does a large quantity of high quality materials. However, it would appear that the staff at the Central Library are under less pressure than their museums colleagues to generate income. Indeed, the Head of Photography Resources at the Victoria and Albert Museum, Jim Stephenson has asserted that " ... with central funding being diminished income generation through picture sales has become vital." In order to capitalise on these assets Stephenson and his colleagues undertook " ... research to address the opportunities represented by the commercial needs of publishers in the United Kingdom which are involved in traditional and multimedia publishing."

In order to address the needs of such companies considered by Stephenson, with the income generating possibilities advanced by Fopp, it is clear that the staff at the BLS require a policy on the involvement of the private sector, a point stressed by the authors of the *Birmingham ICT* strategy.

> Birmingham, perhaps more than any other public library, owns materials capable of generating revenue streams which must be of interest to the private sector or to the entrepreneurial side of academia ... what stance do we adopt on the exploitation of publicly held materials?
>
> (Birmingham 1999: 56)

I would argue that it is possible that if financed and managed effectively the BLS could exploit the commercial possibilities of the photographic archive through the establishment of on-line and off-line digital resources. As stated elsewhere, information has a high market value: there is no reason why this should not apply to the visual information inherent in photographic images.

Income Generation

To date the Birmingham Library Service has yet to undertake a significant entrepreneurial project embracing the private sector using digital technologies in order to raise revenue. James believes that this is primarily because of the problems arising around copyright "... and the fact that contracts tend to be weighted in the favour of private companies." Nevertheless, it would appear that the BLS could gain financially by becoming further involved with the publishing and media industries. James' city colleague, Ian Harrison, the picture librarian at the Birmingham Museum and Art Gallery, has observed that commercial customers are prepared to secure the use of images at reasonable cost, even (where time pressures dictate) "at the expense of quality."

James' ascertain that to date staff within the BLS have been reticent to embark on significant commercial projects is understandable given the strong historical public service ethos entrenched within public libraries. Indeed, to shift from providing resources for public (non-profit) advantage, to addressing the needs of private business would require staff within libraries to adopt a new mind set, in addition to confronting a range of practical issues. Having considered entrepreneurial projects in academic libraries Corlett (1996) has identified a number of issues that library staff would need to address. It is possible to apply the "four universally applicable tenets" identified by Corlett in relation to academic libraries to those responsible for resources within the public library sector. Corlett suggests that

> Any ... project should be compatible with the library's and the institutions objectives, (whilst) ... entrepreneurial projects must be managed in such a way that they do not undermine or put at risk the mainstream activities of the library and information service. (Thirdly),

> institutional support, at the highest level, is essential for all but the smallest of initiatives, (whilst) everybody must realise from the start that risk is involved, and must accept the likely consequences of failure, in both financial and human terms.
>
> (Corlett 1996: 135)

As Corlett's recommendations testify, the reluctance to engage with commercial activities expressed by James is not unreasonable. However, there are, of course, many examples where individual institutions have successfully collaborated with the private sector. As has been seen, the BLS, along with a number of other library authorities, continues to work closely with Input-Output in order to provide access to computers and training. The British Library Digital Library Programme, meanwhile, has taken the route of private investment in the digitisation of its historic collections, inviting " ... potential private sector partners for the exploitation of the historical collection ... in order to assess it as an investment opportunity" (Alexander and Prescott 1998: 15). Initiatives embracing the private sector undertaken by institutions such as the British Library have received significant government backing in recent years. Indeed, the Public Libraries Review *"Reading the Future"* proposed private investment and "creative partnerships with the private sector" as a major option for funding new services and projects (DNH 1997a).

"New Opportunities" and other sources of funding

In addition to advocating public-private partnerships, in recent years government has overseen the dispersal of additional funds derived from a variety of sources. The National Lottery New Opportunities Fund has provided £20m to train 27,000 library staff in the use if ICTs', whilst during 1998/99 the Heritage Lottery Fund (HLF) clarified the extent and nature of the support given to library and archive services, identifying a provisional

allocation for these areas of £18m a year, rising to £20m a year by 2001/2. Furthermore, the HLF has liaised with the New Opportunities Fund in order to identify an operational distinction between NOF's support for content creation projects and the HLF's intention of supporting digitisation for other purposes. Previously the library sector had been able to engage with the Heritage Lottery Fund which had invited such projects as the "conservation of important items and collections" including "projects which assist in preserving original materials at the same time as increasing public access to the information they contain such as ... Digitisation projects..." (DNH 1997b: para. 5.3.13.) This support was enhanced further when in 1997/98 the Department for Culture Media and Sport/Wolfson Public Libraries Challenge Fund distributed £3m for the development of IT in libraries.

The initiatives cited demonstrate the range of public funding available for libraries and archives in order for digitisation projects to be undertaken. As such, and as the *Coming to Light* initiative reflected, any work undertaken with the photographic archive at Birmingham will be directed by the criteria imposed by the funding organisations offering financial assistance. Each of the funders supporting the Library's work has its own objectives, requiring library personnel to formulate and execute projects that fulfil a diverse (and not necessarily compatible) range of criteria. In this context I believe that it is essential that personnel are clear about the use of ICTs' within the broad framework of the provision made by the Library Service in Birmingham.

By using public funds to undertake further work with the photographic collections, including creating (digital) content, the BLS would of course be continuing a process that has occurred over many years. In the past the BLS has secured funding through a variety of channels. The Inner City Partnership Programme provided the core capital support for the History Van, for example, whilst other sources of funding available to

libraries have included the European Regional Development Fund/Social Development Fund, the European Union Telematics Programme, the British Library, the Foundation for Sport and the Arts and the Training and Enterprise Councils.

Despite additional revenue becoming available to the Birmingham Library Service, securing budgets for the provision of information communication technologies will continue to be problematic. As the cost of equipment and network connections continues to fall, so the recurrent costs of maintenance and support continue to rise. The situation for personal computers is particularly problematic as every new facility and piece of software makes machines over around two years old relatively short of processing power and memory capacity. Meanwhile, as the authors of the *Birmingham ICT Strategy* stress, securing the replacement costs of ICTs' will continue to represent a significant and ongoing challenge.

> Printers and, to a lesser extent, other peripheral items of equipment such as keyboards and mice, are vulnerable to wear and tear and to a rapid rate of obsolescence. There are several hundred, if not thousands of such items now in service, with a huge replacement cost. The incidence of theft of equipment has thankfully reduced after intensive security measures were put in place, but never entirely disappears, again with some attendant costs.
>
> (Birmingham 1999: 34)

Although the cost of providing digital resources should not be underestimated, as the collections management project instigated by the Conservation Department at the Central Library demonstrated, suitable hardware is not (sufficient funds permitting) prohibitively expensive. The relative cheapness of hardware and the availability of software, which can be

downloaded directly from remote sites, raises fundamental issues for library managers, who remain locked into traditional means of ordering and supplying resources. At a time when competition in the computer supply industry is highly competitive, Barrett found that it was more cost effective to approach a supplier directly, rather than use a source authorised by the City Council. With financial pressures continuing to impact on the public library service, such resourcefulness raises important issues about the way digital technologies are procured. As a customer the BLS is susceptible to the idiosyncrasies and machinations of a market dominated by powerful players. Against this context, any savings that can be made should be achieved, especially as the price of technologies can rise as well as fall. As has been seen, the future cost of digital (and silver based) photographic technologies cannot be predicted with any certainty.

In addition to addressing the funding issues surrounding the acquisition of hardware and software, when considering the use of digital technologies staff at the BLS must also address the costs associated with copyright. Although to date personnel have sought to acknowledge the rights of those associated with the resources in their custody, any attempt to identify all the creators of works in the archives would have a significant impact on the viability of any digitisation programme undertaken. The time and costs involved in tracing copyright holders, along with the negotiations and clearance procedures that would need to be undertaken, could easily exceed those of scanning and indexing material, which, as has been highlighted, are lengthy and demanding activities in their own right.

Working with other institutions

In order to offset some of the costs incurred with using digital

technologies, including those associated with copyright, the BLS staff could continue to work jointly with their peers in other organisations, including universities and colleges and other institutions whose support might be mutually beneficial. Whilst acknowledging the close historical links with the museums service in Birmingham, Kinglsey has recognised the merits of continued collaboration. In an internal document *"Joint Working Between Libraries and Learning Division and the Museum and Art Gallery,"* Kingsley notes that whilst there has been a "... longstanding history of successful co-operation between Libraries and the Museums and Art Gallery in Birmingham ... to date this ... this has operated on an informal and friendly basis rather than as part of a long term strategy." Considering photography in particular the document goes on to state that "... there are a variety of aspects which need consideration, including photography as an art form, celebrated in joint exhibitions: photography and ethnography; and the possibility of a jointly developed Collections Policy/Strategy."

It would appear that the connections between photography, the library and the museums service that have existed since the last century, and which were celebrated in the *Coming to Light* exhibition, have only recently been fully acknowledged by those concerned. By strengthening the already close links between the library and museums service in Birmingham it would appear that each institution could benefit, especially where the joint consideration of ICTs' is concerned. In recent years government policy on museums has been that they should " ... give priority to exploiting the opportunities offered by information technology" (DNH 1996). The Museums Association's recommendations for government action, published as *The National Strategy for Museums*, meanwhile, has described how new technology is impacting on public access to museums collections and claims that because of telematics and multimedia,

> ... people throughout the world are beginning to expect on-line access to museums objects' and that all registered museums should be connected to the information superhighway as part of any programme of connecting public bodies.
>
> (Museums Association: 1996)

Although joint working between the library and museums service in Birmingham would appear to be of mutual benefit, the reasons for each using ICTs' and to what purpose would need to be clarified prior to undertaking any initiative. The current position of each institution in relation to ICTs' must also be established. Lees (1993) has suggested that largely through the use of gallery interactive and multimedia interpretive presentations, museums have previously been further ahead (compared with libraries) in their exploitation of digital imaging technologies. Multimedia and digital gallery interactive components have, after all, been commonplace in museums since the early 1990's. However, Lees also concludes that it is apparent that museums are probably some years behind libraries in the development of networked catalogues, whilst archives services are behind both.

In addition to using the expertise of their museums colleagues to inform decisions regarding the public use of digital technologies, the staff at the Central Library can also look to this sector to inform decisions regarding the potential to establish commercial partnerships. The Birmingham Museum and Art Gallery has recently established a picture library, which, as an income generating service, derives revenue from license fees and selling items such as books and postcards. Income generation is essential as the department is entirely self funding. Promoted through BAPLA and specialist journals the library has around 1200 images. The current Picture Librarian has noted that before his appointment in 1998 the sale of images was undertaken "in a fairly ad hoc manner." Revenue derived from the picture library has increased tenfold to around £40k a year, a figure which excludes

licensing agreements. In considering the funding of information communication technologies, staff at the Central Library would no doubt gain much from the recent experiences of those colleagues at the Museum and Art Gallery who have sought to enhance the commercial exploitation of the museum's unique resources.

It is apparent then, that whilst staff within the Birmingham Library Service appear to have a number of options available to them in order to provide funding for the use of digital photographic technologies, these personnel must be clear about the purpose of any new, digital, content. As the empirical work has demonstrated, the provision of digital services and content can be advantageous in a number of areas, not least in the ability to enhance informational resources and to support one-off events such as exhibitions. Clearly ICTs' in libraries also have the potential to support community development, as well as improving administrative services.

Creating digital content

In addition to fully understanding the benefits associated with information communication technologies, staff within the BLS must also be aware of the costs associated with the creation of digital content. Rhind-Tutt (1997) has identified those aspects of digital content creation that require funding and resources. Administration, data preparation, database design, retrieval software, artwork, documentation, build, mastering, replication, shipping and handling, printing, support, sales and marketing all require the allocation of discrete budgets.

When considering the funding of digital initiatives Tomos has noted that whilst it is essential that librarians and archivists capitalise on their

existing abilities, they should also broaden their key skills.

> Library and information professional are, by tradition, 'sign posters' of information, not IT mentors let alone graphic designers of web pages. However, in a time of growing austerity, the returns of increased revenue funding may justify the effort required.
>
> (Tomos 1997: 19)

Tomos goes on to warn that if these professions do not embrace new technologies then others, including staff employed by multimedia support resources and telecentres, may well " ... acquire the rudimentary skills of information management traditionally guarded by librarians" (Tomos 1997: 20).

It is clear that in order to undertake any significant projects' utilising digital technologies the staff responsible for the photographic archive at the Birmingham Central Library must secure adequate and sustained funding. Parry's view is that such initiatives will ultimately be dependent on government assistance.

> Large scale digitisation of public library special collections content on the grounds of its national or international importance is very unlikely to occur until and unless central government takes some very positive steps to fund it.
>
> (Parry 1998: 42)

In the absence of sufficient funding being made available from government sources, the library fraternity could look to private and public institutions. The continued involvement of the Higher Education sector in particular could provide libraries with valuable resources. Networked special collections have the potential to be used extensively by the Higher Education community, both in the UK and overseas. Furthermore, as the empirical

projects have demonstrated, the HE sector could bring to bear expertise and knowledge appropriate to the range of practical needs of professionals in the public library sector when the production of digital content is undertaken. In order to analyse issues relating to the creation of digital content by the Birmingham Library Service this text goes on to consider four aspects of the production process. Issues pertaining to the scanning and digitisation of photographic materials are examined, as are issues relating to the design of electronic media. This section then considers factors influencing the creation of metadata, prior to examining the procurement of appropriate digital resources.

5.4 Production

Digitisation

As a result of the digital media initiatives undertaken in recent years, staff at the Central Library have been able to identify practical benefits and drawbacks associated with a range of information communication technologies. The relevance and importance of these projects has been stressed by John Dolan, Head of Birmingham Central Library, who has recognised that they " ... offer an insight into the way libraries as a whole might develop in the future. " The work in this area has highlighted that prior to undertaking any projects with ICTs' the library staff should be sure of the value of such initiatives and how these relate to the activities undertaken with the photographic collections. After the failure of the *Photopoint* initiative to proceed beyond the production of a (flawed) prototype, Arts and Leisure Services manager Martin Flynn believes this is particularly important where projects involve the production of digital content through the intensive and costly process of scanning and digitising photographic materials.

Having devised a proposal using information communication technologies, perhaps negotiating with key funders as appropriate, staff at the Central Library would obviously be required to select material for inclusion in any project. At this stage material that already exists in digital formats could be considered. (In addition to the initiatives already cited, staff at the Central Library have produced a number of publications in recent years incorporating components of the photographic collections that were digitised for reprographic purposes, for example). Once assimilated, digital content has to be disseminated in an appropriate and effective manner, requiring the design of any material produced to be considered. It is likely that contextual information would need to be researched and written, whilst the hardware by which users access the digital resources has to be specified where this is procured by the library service itself.

The production of digital content is a time consuming and monotonous process. Robert Ryland, a library assistant in the Central Library's Local Studies and History Section, has described his experiences of scanning photographic materials as "laborious and mind numbing." It is clear then that prior to undertaking any such work, the library staff must be sure of the purpose and potential outcomes of such initiatives. The merits of using digital technologies have in part been demonstrated by the empirical projects undertaken as part of this research. The creation of the web site with images from the History Van archive, for example, demonstrated that digital facsimiles of photographic materials presented on-line have the potential to allow the research value of original photographic materials to be exploited by local, national and international users. The *Coming to Light* project successfully showed that where material held by institutions is unique, digital copies allow such materials to be disseminated to a wider group of users. The empirical work has also shown that if used effectively, digital

technologies have a role in protecting original items from the rigours of use, whilst also facilitating interaction and communication between individuals and communities.

Although there are very good reasons for undertaking the process of producing digital copies of photographic materials held in photographic archives, having undertaken a range of disparate and non-conclusive initiatives with information communication technologies, I believe that the Central Library staff should now consider the implications of acting upon these reasons very carefully. Where it is necessary to create new digital content staff would need to scrutinise closely which aspects of the collections are digitised, as the success, or otherwise, of the selection process would have a significant impact on the subsequent use of any digital resources procured by the library.

Whilst personnel at the Central Library have embraced the possibilities afforded by digital media with considerable enthusiasm and alacrity, it should be remembered that any proposals using information communication technologies drawn up by the library staff must be rooted in the provision and role of the public library service. It is important, therefore, that any work undertaken with digital technologies should adhere to one or more of the core duties of libraries, identified as relating to education, information, culture and leisure.

The attributes of photographic materials

In formulating proposals involving the use of ICTs' and the digitisation of aspects of the collections, staff could consider the broad attributes of the photographic materials in their custody as they relate to the functions of the

library service. Following on from the creation of the History Van web site, where images were selected for their likely interest to schools, the *educational* value of material could be considered. For example, the Brandt material recording aspects of housing in Birmingham in the forties and fifties could be exploited for its educational value about prevailing social conditions. Similarly, the historical *information* inherent in the Warwickshire Photographic Survey archive could be promoted for use by particular groups, as could those aspects of the collections which have the potential to be used for *cultural* and *leisure* purposes. Although I would suggest that pursuing the notion of relating the purpose of digital content creation to the role of public libraries is somewhat fundamental in its approach, the adoption of this principle would ensure that projects' remain relevant to the needs' of library users.

The practical work using digital technologies undertaken by the BLS in recent years, including the empirical projects instigated by the author, have been important as staff have become aware of the digitisation process, including issues pertaining to the selection of materials. Having experienced and considered the practicalities of this process, James believes that the preservation needs of individual artefacts should be high when materials are selected for digitisation. James advocates giving priority to those aspects of the collections which would be protected from the dangers of both excessive handling and exposure to inappropriate environments. Furthermore, James would also consider digitising those materials which because of their size and physical characteristics might preclude them from being disseminated by other means.

As a result of being involved with the various digital projects undertaken by the BLS to date, James recognises that the process of producing scans is both a time consuming and specialised process. James has concluded that a commercial company should be used to undertake this work

in the future. Any such company would be obliged to adhere to a contract guaranteeing a high degree of quality control. Two particular areas of expertise in this area that have not been effectively addressed by the library staff to date are those relating to calibration and file management. Indeed, " ... unless each part of the digital system has been calibrated, there will be deviations in image quality at each stage from capture to display on a monitor or output on a printer" (Ostrow 1998: 5). It is also important that those undertaking the scanning of materials have a clear understanding of file size and formats. There can be adverse repercussions in striving for a higher level of resolution than is absolutely necessary for any specific application, as high resolution digital files contain an enormous amount of information. The file for an 10 x 8 inch, continuous tone, black and white photograph, for example, contains as many bits of information as a two million word essay.[2] Images digitised at higher levels of resolution contain more information, leading in turn to increased costs to digitise, longer transmission times, the necessity for more storage space on file servers, and the need for upgraded researcher workstations, with both more memory and higher resolution monitors.

The fact that the scanning of the photographic materials at the Central Library has been undertaken by library personnel is important, because although well meaning, they have no real expertise in this field. As a consequence, no quality control measures have been devised or implemented. Nevertheless, with the history of the involvement of library personnel in the scanning process, it is important that any new measures are introduced appropriately and with sensitivity. Indeed, whilst it is important that those with specialist skills are used to undertake the duties necessary to exploit digital technologies fully, Menzies has recognised that personnel should not be unnecessarily sidelined "... as the they often end up working as a mere adjunct to sophisticated production and information-management

2 This illustration assumes scanning at a spatial resolution of 4000 x 50000 pixels and 8 bit per pixel grey scale tonal resolution, with the words in the essay averaging ten letters long each.

systems which handle all the planning, administration and other support ..." (Menzies 1998: 95). As it is essential that all of those involved in the appropriation of digital technologies at the Central Library are committed to such initiatives, such observations should be noted if staff are not to feel resentful or undermined by any systems implemented in the future.

Design

The success of any digital resources created by the Birmingham Library Service will in part be determined by the effectiveness or otherwise of the design of the media created. As such the use of information communication technologies to disseminate facsimiles of photographic materials raises fundamental questions about the characteristics of photography and its digital equivalents. These issues are examined by analysing responses to both the physical and digital content of the *Coming to Light* exhibition held in the autumn of 1998.

The empirical work associated with the *Coming to Light* exhibition has been used as a vehicle to explore issues relating to the design and presentation of (digital) photographic resources as it was the most substantive of the author's projects undertaken. The web site created using images drawn from the History Van archive was produced by members of the team at the School of Computer Science at Birmingham University who had little expertise in graphic or information design. The *"Time Machine"* interface design, meanwhile, represented a proposal that included creating an immersive environment in which the user would sit. In this sense the completed programme had limited functionality, although its creation did inform the production of the on-line resource that was to later accompany the *Coming to Light* show.

The Exhibition

Occupying a single gallery in the Birmingham Museum and Art Gallery, the *Coming to Light* exhibition comprised of 100 prints, subdivided into five sections: Photography and Architecture; Face to face - Portraits and Likenesses; Towns and Countries - Landscapes and Views; Proof Positive - Photographic records and documents; Company records - Commercial and Industrial Photographs. The gallery also housed a number of cabinets containing assorted photographic apparatus and documentation, including press cuttings, articles and journals. Devised and curated with the intention of promoting and celebrating the photographic collections held by both the Central Library and the Birmingham Museums and Art Gallery, the visitor comments to the exhibition where both very positive and complimentary. Indicative responses included such phrases as "excellent," "thoughtful and well organised," "interesting and valuable," "stunning," "stimulating and inspirational" and "wonderful." During the four months of the exhibition around 150,000 visitors attended the Museum and Art Gallery. The curator of the exhibition, Peter James, asserts that "It is reasonable to assume that a very high proportion of these visitors saw the exhibition."

Responses

The positive and complimentary responses to the *Coming to Light* exhibition were reflected in the substantial media coverage given to the show. National press coverage included reviews in the *Independent on Sunday, The Times, Daily Mail, Daily Mirror, Daily Express* and the *Burlington Magazine. The Guardian* produced a two page special feature which was subsequently reproduced in the internationally distributed *Guardian Week.* Local press

coverage included a full page preview in the *Birmingham Post*, a special feature in *What's On*, a two page article in the *Birmingham Evening Mail* and coverage in both the *Express and Star* and the *Coventry Evening Telegraph*. The photographic press also covered the exhibition, with a two page feature in the *British Journal of Photography*, a four page article in *The Master Photographer* and articles in a number of other publications including *The Photographic Journal*, *Amateur Photographer*, *The Professional Photographer* and *Foto Magazine*. The exhibition was also promoted widely by local broadcast media, including a special feature on Central News and coverage by local radio.

The amount of positive press coverage given to the show, in addition to the favourable responses made by the public would indicate that the *Coming to Light* exhibition was well received. In curating the exhibition James had evidently selected and presented the material successfully. The positive responses suggest that James had effectively curated an exhibition that aimed to promote Birmingham's relatively hitherto unknown photographic heritage, by showing "works by some of the giants of photography" (Arnot 1998). Writing in the *Independent of Sunday*, Tim Hilton's phrase of "a wonderful surprise" is indicative of the reaction to the exhibition by many (Hilton 1998).

At a time when the staff at the Central Library have been using digital technologies in order to find new ways to disseminate the photographic materials in their custody, I believe that the reaction to the *Coming to Light* exhibition acts as a salutary reminder that the use of such technologies must only be undertaken where appropriate. The public and media response to the show appears to add credence to Hull's ascertain that in their enthusiasm to embrace digital technologies, many within the library and museums services may have "... forgotten ... the pulling power of the real thing ... (and) ... as virtual reality takes hold, reality becomes even more wonderful" (Hull 1997:

30).

Photographic artefacts

Although of course information communication technologies allow facsimiles of photographic materials to be disseminated to users on a potentially global scale, I would argue that no digital media can compensate for the loss of information inherent in photographic *artefacts*. Indeed, Clarke reminds us that

> Any photograph is dependent on a series of historical, cultural, social and technical contexts which establish its meaning as an image and an object.
>
> (Clarke 1997: 19)

With this observation in mind the creation of a graphical user interface, constrained as it is in the fixed parameters of the flat, reflective (or worse smeared and dirty) confines of the VDU, cannot begin to compensate for the realities of the "real thing." In addition to imparting meaning, Clarke also reminds us that the context in which images are viewed influences our interpretation of them.

> On a functional level ... the photograph is dependent on its context. The 'fixed' image it offers is subject to a continuous state of transformation and metamorphosis. We forget, for example, how crucial are such obvious factors as the differences between black and white photography and colour, or between small and large images, or square, rectangular, or even circular images. We might see a photograph in a newspaper, or magazine (on glossy or matt, thick or thin paper), album, frame, on a wall, taken from a wallet, in a document or in a gallery, in a box or locket, or as a negative or contact print. Each change of context changes it as an object and alters its terms of reference and value, influencing our

understanding of its 'meaning' and 'status.'

(Clark 1997: 19)

Photographic images presented via digital technologies are clearly devoid of the context of their creation or usual place of dissemination. No longer "constrained by (photography's) inherent automatism and realism" (Robins 1995: 30) they exist in an artificial electronic environment dependent on unreliable and often poorly calibrated hardware. Analysing the merits of digital images Ostrow reiterates Clark's observations relating to the importance of 'meaning' and 'status' inherent in photographs, suggesting that because "artifactual value is lost ... digital images may ... better address the needs of a non-scholarly audience" (Ostrow 1996: 6). With a remit to provide resources to a wide constituency of users, both "scholarly" and "non-scholarly," I believe that those responsible for the procurement of digital technologies at the Central Library need to give careful consideration to such observations.

The concerns relating to the merits of the digitally rendered image over that of the photograph - dependent as it is on both chemical and industrial processes of reproduction (Benjamin 1973) - are reminiscent of some of those debates which have centred around photography since its invention. Trachtenberg (1980) suggests that the reaction to Delaroche's declaration relating to the moribund status of painting initiated an important debate concerning the relationship between photography and art which contested photography's "literal" and "realistic" aspects. I would suggest that these ongoing arguments, concerning what Tagg (1988) described as the "currency" of photography have only recently been eclipsed as a consequence of the proliferation of the digital image - the focus has shifted from the analogue to the digital. I believe that where interpreted *through* digital media, photographic images - which Berger (1974) suggests have been

"sanctioned as an analogue of the real" - lose much of their artefactual value. Despite the best efforts of those responsible for the design of the ubiquitous graphical user interface, the "status" and "meaning" of photographic images will be harder to interpret.

The reappraisal of the photographic image brought about by the influence of the VDU is the latest development in a series of occurrences that has seen photography being reinterpreted over the years. Crimp argues that since the mid sixties - marked by the acceptance of Ansel Adams' work in the Museum of Modern Art - "the formerly plural field of photography was henceforth reduced to the single, all-encompassing aesthetic" (Crimp 1993: 53). Preceding the observations made by both Sekula and Schwartz cited in **Chapter One**, in the mid sixties Szarkowski argued that until this time photography was primarily useful within other discursive practices, used ostensibly to serve the purposes of information, documentation, evidence, illustration and reportage.

> The pictures reproduced in this book were made over almost a century and a quarter ago. They were made for various reasons, by men of different concerns and varying talent. They have infact little in common except their success, and a shared vocabulary; these pictures are unmistakably photographs. The vision they share belongs to no school or aesthetic theory, but to photography itself.
>
> (Szarkowski 1966: 45)

By being (re)presented through digital technologies, perhaps existing as part of an on-line database, today photographs are being interpreted in ways that construct (false) alliances and (spurious) connections: meaning and status, I would argue, are being created by digitally facilitated association.

Collections and the importance of serendipity

The design of any digital content provided by the BLS must of course reflect the needs and abilities of its users. Moreover, just as the use of digital technologies allows for only limited information about individual photographs to be interpreted, the necessity to select images from the two million photographs that make up the collections means that only a small proportion of images are ever likely to be presented in digital form. Thus, whilst potentially providing greater access to materials on the one hand, the use of ICTs' also restricts access on the other. Indeed, whilst I believe that it is unlikely that any one user will ever pore through each and every one of the images housed in the Central Library, having such extensive holdings ready to hand does broaden research horizons and make possible discovery's that can only occur through serendipity and "accident."

Part of the allure of digital technologies explored by professionals working with photographic images relates to the ability to provide access to holdings remotely. It is apparent that the design of any such resource is fundamental to its success. When creating the site and the architecture for the *Coming to Light* programme, the designer, David Ashley, responded to the attributes about aspects of the Library Service that James wished to convey. James suggested that the site should reflect that the Central Library aims to be both "people friendly" and "go ahead" whilst providing "easy access." In order to establish user responses to these aspirations, a questionnaire was devised inviting users at the gallery to give critical feedback about the programme.[3] These responses were supplemented by those made on-line via the "Visitor Book" integrated into the programme.

The results of the *Coming to Light* programme questionnaire revealed

3 See Appendix 1 for a copy of the questionnaire.

that 40% of users had not used a similar programme before, despite the proliferation of interactive multimedia components in galleries and museums. Although four out of ten users claimed to have no previous experience of such resources, 78% indicated that the navigational system for the site was excellent, good or acceptable. This suggests that the design of the interface was effective, the importance of which has been stressed by Tognazzine (1992) and reiterated by Nielson (1995).

> Of all the forms of information delivery, multimedia has the greatest potential for clear, error-free communication. It also has one of the highest potentials for causing confusion.
>
> (Tognazzine 1992: 171)

The high favourable responses to both the navigational system and the visual design of the site (77% of users described this to be either excellent, good or acceptable) indicates that Ashley had used a range of skills very well. As Marcus states

> Designing screens includes the design of windows, menus, icons, cursors, dialogue boxes and control panels. Orchestrating the design of these components is a supreme test for systematic, information-orientated graphic designers.
>
> (Marcus 1992: 111)

Significantly, as a consequence of using the *Coming to Light* site, 72% of users said that their overall experience of the exhibition was enhanced, whilst 80% of respondents agreed that such programmes have the potential to contribute effectively to exhibitions.

Despite the favourable responses to the multimedia component of the *Coming to Light* exhibition, criticism was made about the quality of the images

reproduced. Only 16% of users described the reproduction of the images as good, with over a quarter (27%) describing them as poor or unacceptable. Although high resolution scans were produced from 5x4 transparencies, I believe that the high number of users dissatisfied with the quality of reproduction is a reflection of the inherent limitations of the technology and hardware employed.

Metadata

In addition to the scanning of materials and the provision of appropriate software and hardware to view digitised photographic collections, the Central Library staff will continue to be required to research and create metadata to accompany any digital content. A number of research projects have considered this aspect of the digitisation process in recent years. In particular, the Electronic Libraries Programme (eLib) has undertaken two research initiatives considering the digitisation of images including photographs. Both the HELIX and MIDRIB projects have digitised images in order to create large national image banks in their respective fields. Technical issues addressed have included copyright, licensing agreements, the identification of standards and the creation of frameworks for the classification of images.

It is essential that the importance of creating catalogues and the indexing of photographs is recognised by the Central Library staff. A number of initiatives using digital technologies within photographic archives have been adversely effected by the problematic nature of this process, including those undertaking by librarians utilising local studies collections in Durham and Kirkaldy (Watson 1996a, Klak 1997). Nevertheless, the potential to retrieve material held in image banks using digital technologies is well

recognised. Hopkins (1996) states that along with the "limitations of ... finding aids" this was one of the main reasons why the staff at the National Railway Museum instigated a digitisation initiative in the early nineties.

Although the benefits of electronic catalogues and retrieval systems have been proven in a number of areas of library provision, Bryant has indicated that in some areas (including LSH sections), the potential of such systems has yet to be fully exploited.

> Public libraries generally are well advance in the automated cataloguing of their current loan and reference collections and in developing networked access to catalogues. However in the areas of local studies and special collections automated cataloguing (and often cataloguing per se) is less universal. There are many important local and special collections whose catalogues have not been automated and added to union catalogues or networks or which remain uncatalogued. Overall 50 million catalogue records await conversion, of these 12 million records, representing 6.5 million titles are in public libraries the majority contained in special and local studies collections.
>
> (Bryant 1997: 23)

It is likely that one reason why local studies sections remain behind in the process of cataloguing and indexing is that these two activities require more time and resources than image capture. This is particularly true for projects involving the digitisation of material for which there are inadequate existing catalogues or indexes. Watson suggests that any attempt by library staff to scan, catalogue and index simultaneously is likely to be difficult (Watson 1996b). Although to some "laborious and mind numbing," Watson points out that image capture tends to be a quicker process than cataloguing and indexing, activities which require staff with traditional librarianship skills and subject knowledge. (Watson has based her observations on the development

of the Durham Record project, an interactive database of digitised historic photographs and current and historic Ordnance Survey maps which have been made accessible via public touchscreen interface at four sites in Durham's libraries and archives.)

Staff Skills

When considering the creation for metadata for material held at the Central Library, James believes that this process would be impeded by the decline in the numbers of specialised and skilled staff. James concludes that in the absence of specialists working with the collections staff working in the Conservation Department of the Central Library would probably have adequate knowledge in order to undertake some aspects of the task of creating metadata. Harris (1996) has stressed the importance of recognising the different disciplines involved when creating indexes and cataloguing materials. Having attempted to develop an integrated computerised catalogue of the Borough's Local Study Library, Archive and Museums Collection, Croydon's archivist recognised the differing cataloguing needs and priorities of each. Harris concluded that *cataloguing* should be undertaken by those in separate (specialist) professional spheres, whilst the task of *indexing* could be extended across professional divides.

When creating information for inclusion in any digital resource James believes that the amount of information provided should ultimately be contingent on the subsequent use of that material. The likelihood of the material being used by either "scholarly" or "non-scholarly" users will determine how much information is provided. The task of indexing materials is no doubt considerable (Sargent 1995). However, (and as the work undertaken with the History Van has demonstrated) unless material is

properly organised and indexed, collections will inevitably be underutilised (Smith 1998).

Whilst considering the provision of metadata to be incorporated in any digital content, the staff at the Central Library must consider the information requirements of the users of the resource. Describing a project undertaken in Hereford and Worcester in the early nineties, Drewitt and Morris emphasise that it is important that there is parity in the levels of information provided by libraries. Established in 1993 The Golden Valley Information Project aimed to explore the feasibility of placing on-line terminals in remote parts of the county. In an attempt to empower those inhabitants in predominantly rural areas, the project managers, albeit inadvertently, neglected the comparable needs of citizens in towns and conurbations.

> During the project it rapidly became clear that the information wanted in rural area was ... equally applicable to people in urban areas. The premise of the original project was that people in rural areas were particularly disadvantaged by their isolation and the distance from sources of information. The truth of this was evident during the project, but it also became clear that many people in urban areas - particularly in small towns - were not much better off in information terms.
>
> (Drewitt and Morris 1997: 136)

Thus, whilst the Central Library staff must of course address the relevance of digital content to their intended recipients, the information needs of others who use the same content should not be underestimated. There is a risk that such trends may become more frequent as the use of digital technologies becomes more common and staff with expertise about photographic collections are replaced by those with more general skills. As Menzies has suggested there are dangers in using digital technologies as surrogates for

individuals with real knowledge and experience, with "computer networks and related data files (providing) the continuity and institutional context, where a local community of local people known to each other over time provided this in the past" (Menzies 1998: 95).

The risks associated with the displacement of skilled staff in favour of the creation of digital resources may become pronounced as recipients face the possibility of being offered an excess of electronic information. Two types of information overload can be broadly distinguished. First there is simply too much information. Second, information can be so chaotically organised that it cannot be used - what Hiltz and Turroff (1985) call "information entropy." The library staff must recognise that in their eagerness to use digital technologies they must be realistic about the benefits of such systems. They should not be persuaded to procure such resources in order to satiate the information demands of, at present at least, a small minority.

Resources

The use of digital technologies by the BLS will require investment in order to provide adequate resources. Apart from those facilities already highlighted, notably the History Van and the hardware and software used in the Local Studies and History Sections and the Conservation Department, the Birmingham Library Service has yet to make a substantial investment in order to use digital technologies with the photographic collections. There is, therefore, an opportunity to consider the acquisition of digital resources in relation to the facilities already available to the staff at the Central Library. James reiterates that these are relatively few. For example, there are no areas dedicated to viewing images in an appropriately lit environment, with properly controlled temperature and humidity. Likewise materials are not

stored in any special environment: only in the Early and Fine Printing Section on the third floor is the humidity controlled with portable systems, and even in these spaces the temperature is not regulated. This situation reflects that the preservation needs of materials in libraries have only recently been recognised. James reiterates this point stating that now " ... there is a huge awareness of the importance of environmental conditions, although this is only a relatively recent trend. When the Library building was built in the 1970's environmental controls were not an issue. The priority then was placed on access." Randall reiterates James' observation, noting that

> ... interest in library preservation was sporadic during the first half of this century and following the Second World War, British librarians developed interests in other directions. The design of new libraries and the application of information technology, for example, seemingly had greater relevance for the future than traditional custodial concerns. This was reflected in the dropping of preservation related subjects from library school curricula. It was left to the newly developing archive profession to foster research into conservation techniques and to encourage the training of conservators.
>
> (Randall 1991: 141)

The use of digital resources in the Central Library has the potential to reduce some of the ware on materials that has occurred to date and, in the absence of appropriate storage conditions, is likely to occur in the future.

Having considered the potential use of digital technologies, James has suggested that workrooms for dirty, non-conserved materials would be required for specialist treatments prior to scanning. These rooms could be designed in order that materials can be moved easily within the building. This proposal is informed by the fact that at present there are problems with the Conservation Department residing on the top floor of the Central Library. In order to be treated material has to be moved upwards (and of course,

subsequently downwards) through the library, making it susceptible whilst in transit. James believes that the problems caused by the size and design of the Central Library in managing aspects of the photographic collections could in part be offset by the utilisation of a network. Images could be called up on a digital system as and where appropriate throughout the building. Any such provision would have to be provided within the BLS's general ICT development budget.

In addition to any resources being made at the Central Library it is important that the Birmingham Library Service responds to the needs of all its users. The importance of the provision at the Central Library is matched by that of the branch libraries. In 1996 the City Council leased 64kb lines from both British Telecom and Mercury to link twenty five branch libraries with the Central Library. Gambles has acknowledged that this provision, whilst satisfactory for the transfer of text, is an inadequate bandwidth for the sharing of digital (picture) files. At that time the Library Service was charged £2000 per annum for each line. To upgrade the lines to a more satisfactory 2mb capability, British Telecom quoted £6000 installation costs per line, each with an annual lease fee of £9000. The costs associated with the multiple provision of resources were also highlighted when in 1997 each of the city's libraries were equipped with CD Rom readers. The expenditure for this initiative, promoted during National Libraries Week, was in the region of £80,000. Both of these example demonstrate that the provision of digital resources has to be balanced with the costs associated with the library's core services.

"Emergency" contingencies

Whatever provision is made with digital technologies by the

Birmingham Library Service, it has to be recognised that the use of such systems are prone to failure. One of the first major breakdowns of the World Wide Web occurred on July 18th 1997, when the actions of a single computer operator in Virginia caused millions of e-mails to be returned, whilst access to web sites all over the world was restricted for days to follow. The operator, an employee of Network Solution Inc, which controls the chief InterNIC root server, had ignored malfunction alarms in a routine procedure involving the updating of Internet addresses. In addition to problems associated with human error, users of networked systems are also reliant on the physical integrity of such systems. A number of banks and stockbrokers pay an annual £30,000 retainer in order that they may use the disaster-recovery dealing room (DRDR) operated by a company in the Docklands area of London. The provision is designed to allow the companies to engage with the world's dealing rooms in the event of bombs, fire, thefts or any other eventuality that might otherwise hinder their ability to trade (*The Guardian* July 31, 1997). Services in the public sector do not generally benefit from the provision of comparable resources, aside from those related to emergency or public order contingencies. It is therefore essential that the staff at the BLS continue to put in place adequate facilities in the likely event of the breakdown of its existing and future digital resources.

In addition to difficulties associated with access bought about by weaknesses in software design, human error and physical damage, as has been seen, libraries and other public bodies engaging with ICTs' could be affected by problems relating to the obsolescence of storage formats. In May 1995 the Public Records Office implemented its Electronic Records Programme, with the specific role of advising government officials on how to classify new formats of information. The purpose of the programme is to ensure that data will be accessible in years to come. In addition to problems associated with the obsolescence of formats, the Public Records Office is also

aiming to ensure that existing material is properly maintained. The adoption of digital methods of storing and disseminating data could lead to the loss of information due to such data being both unreadable (in future there may be no machines to interpret the data) and because data may be corrupted by the progress of time along with the effects of humidity, temperature and other contaminating factors. A possible solution to these problems is to make additional, electronic, copies of digitised data, each time formats change - a costly and inefficient process, but one that must nevertheless be considered by those embarking on a programme of digitisation. Difficulties associated with the loss of digital data would of course be compounded if the original artifacts are lost or, as advocated by some, destroyed.

It is apparent that prior to embarking on any significant digitisation programme staff at the BLS would be required to consider a range of issues relating to the procurement of such resources. In addition to the selection of material, staff would need to consider the system requirements of the provision made; such aspects as user software, hardware and network capabilities would need consideration, as would user access, restrictions and security. The ability to recover costs from users would need to be examined, as would intellectual access. Conversion difficulties have to be recognised, whilst the scale of any undertaking would require particular attention - large systems being qualitatively different from small scale projects. In addition standards and formats would need to be established, along with the provision of any network printing capability.

5.5 Mediation

With the increase in the use of telematics and information communication technologies that has occurred in recent years staff at the

Central Library face a number of practical challenges, not least those relating to issues relating to enquiries and disseminating materials using telematics. In addition to the consideration of practical issues relating to the utilisation of digital technologies, the Central Library staff must also examine issues pertaining to the provision of access to such resources. In order to provide properly mediated access to digital technologies the training needs of both users and staff requires ongoing consideration, as does the protection of intellectual property rights.

Having experienced and considered the use of electronic modes of communication, James is very conscious that it is inappropriate to create a perception that library staff can respond to demands that cannot be met. Whether or not perpetuated by staff these demands are likely to increase in future years. The practical problems of dealing with queries relating to the collections will be compounded by policies which position the library service as the main provider of public access to digital resources. The authors of the *Birmingham ICT Strategy* recognise these trends, noting that the provision of services to customers " ... will need to be significantly reassessed in the light of changing expectations" (Birmingham 1999: 7). BLS staff have infact instigated a consultation process to examine policies relating to such issues as access, security, printing and downloading materials. The authors of the ICT strategy recognise also that the " .... needs of users who are unfamiliar with ICT must be addressed and the level of support which it is reasonable to give must be set out. If this is not done there are adverse implications for equality of access" (Ibid).

Whilst providing digital resources to enhance access to aspects to the photographic collections at the Birmingham Central Library, it is important that staff are able to match their abilities with the expectations and needs of their users. Reid and Rafferty Brown recognise this stating that ...

> (An) important strand in the changing environment is the drive towards end-user empowerment in the accessing of information. There are a number of distinct forces at work in this, but they all prevail in the same direction. There is the 'pull' of increasingly user friendly interfaces and of readier access to electronic databases, and the 'push' of users anxious to do it for themselves. Then there is the management imperative to maintain services with dwindling resources and the inability of service staff to cope with demand in a role of total mediation, leading to a concern to equip customers to help themselves without a decline in the quality of the final result.
>
> (Reid and Rafferty Brown 1996: 173)

It is essential that the staff at the Central Library are clear about where their responsibilities begin and end because, as Water (1998) reiterates, digitisation may encourage more users to seek access to original documents, thus both undermining the surrogate role of digital facsimiles and creating an even greater workload for library personnel.

In providing access to digital resources managers at the BLS must consider issues relating to *information* and *communication* provision. As the empirical work explored, telematics systems allow for both information to be disseminated and for individuals to communicate. Primarily functioning as repositories of information, it is questionable whether by adopting digital technologies libraries have a role in providing access to new means of *communication*. It would appear that to date this point has not been given sufficient consideration by those in the library professions. Indeed, although the authors of the *New Library* report, for example, make laudable arguments in favour of the creation of a society linked by an electronic infrastructure, they fail to address the profound implications of libraries providing the means of sharing information *and* allowing access to communications technologies by a potentially global user group. The reason for this apparent lack of

clarity may have its roots in misunderstandings about the subtleties and capabilities of hardware and software associated with telematics and the electronic transfer of data. It is possible that these misunderstandings may have been propagated by those critics who have analysed the capabilities of information communication technologies. For example, Mitra states how the term Internet has been used to describe a range of areas encompassed by telematics:

> The computer-aided communication system that is now widely available has been labelled several different ways. However, as an emergent cultural formation, it has not been described in any detailed and standardised manner. "Internet" is a term that has been used as an umbrella for the various forms of this technology. The term "Internet" has become a generic label that refers to the electronic system and space where many people can present their ideas to produce a new computer "reality" which is the sum of the various opinions, ideas, practices, and ideologies represented by the texts that make up the bulk of bulletin board "postings."
>
> (Mitra 1997: 55)

Mitra suggests that the different names that refer to the discrete components of the "public telematics system" can be embraced by the single term "Internet."

> There are a large number of terms that are used to describe various aspects of this system. However, fundamentally they all refer to various manifestations of the same phenomenon - the ability to communicate with others using the computer. Consequently I do not engage in the discussion of the various networks available or the multiple "browsing" systems available to look at the networks such as "Usenet" and the "World wide

> web." For the purposes of this ... (discourse), the technology will be primarily referred to as the "Internet."
>
> (Ibid)

By failing to clearly identify and articulate the differences between the technologies that allow information to be shared and for communication to happen, the authors of the *New Library* report have, mistakenly, made the same supposition as Mitra. The differences between the various components that make up what Mitra calls the "Internet" are crucially important when the provision of access to such technologies is considered. Equally important is the nature of the material contained in these various quarters of "cyberspace."

Defining the medium

A page on the World Wide Web will typically use graphics, sound and text to impart information. Links to other, related pages, may also be included. There may be a facility to send a message to the originators of the page, but otherwise the majority of material is predominantly information created by, or for, the site's originator. On the other hand, *newsgroups* allow participants to engage in an ongoing dialogue within a "public" forum - anybody is able to acquire the contents and make a contribution. Other so called "chat" areas allow discussions to take place in real time.

Another very important aspect that distinguishes components that form the "Internet" is that some areas are mediated whilst others are not. Here Mitra suggests that the identities of communities - both "real" and "virtual" - can in some ways be defined by the material considered by the participants of newsgroups:

> The user of the interactive component of the Internet is ... immersed in a discursive space and is bombarded with a barrage of texts that are constantly being produced by thousands of other users. Since the Internet user is empowered to play an active role in the production of the discursive community, identity and community are formed around the discourses that are shared by members inhabiting the cross national virtual space of the computer and Internet. The texts exchanged on the Internet are the artifacts which hold Internet communities together as well as indicators of the direction in which the community is headed.
>
> (Mitra 1997: 55)

Whilst postings to newsgroups are usually unmediated (although there have been a small number of cases where Internet Service Providers have been forced to remove some content, generally anybody can read and respond to the opinions expressed) web pages, on the other hand, contain information that has been selected, edited and presented to represent the views of the site's originators. This is particularly relevant to those sites which are created to impart "favourable" information about public institutions or private companies. The distinctions between the mediated sections of the Internet and those which consist of the endless reflections of a group of individuals are of considerable importance to those in the library service who are offering access to such material. The *New Library* report advocates providing access to sections of the World Wide Web and "... participation in special interest Internet communities" (New Library paras 1.19(e) and 1.20(d)). The report makes no specific mention of newsgroups or other areas of the Internet. Should access to parts of the Internet such as newsgroups be denied? If access to all areas *is* provided, should the library profession encourage users to participate in debates that could be perceived as being offensive or that may even contravene existing legislation?

Through citing an example found on the soc.culture.india newsgroup Mitra highlights the dangers associated with the library service providing unmediated access to materials available via on-line services. Mitra explains that at one point the contributions to the soc.culture.india newsgroup demonstrated extreme animosity to some sections of the Indian community, resulting in a "...series of harangues and name calling that expressed deep antagonisms." Mitra goes on to suggest that "... this exposes the ease with which opinionated bigots are able to utilise the resources of the Internet to produce and circulate weak arguments based on crude rhetoric" (Mitra 1997: 66). Does the library have a role in providing access to computer mediated communications for the benefit of "opinionated bigots"? If not, would such a policy of denial adhere to those principles widely upheld by the profession relating to the provision of access to information and resources for *all*? If the public library service does deny access to such technologies then the danger exists that key global companies will continue to strive to dominate this developing media. Menzies suggests that it is imperative that such "... hegemony (is) challenged at the level of language and frame of reference ..." and that institutions such as public libraries have a role in facilitating "... a new critical discourse on globalised capitalism where the priorities of particular people, places and communities are paramount" (Menzies 1998: 96).

Information *and* communication

Clearly questions pertaining to the provision of access to "appropriate" material and technologies remain at the core of the decisions currently facing the library fraternity. To date it seems that many in the profession who have experimented with telematics technologies have sought to give precedence to the "positive" aspects of the material and communities that they have

represented. Recalling the example of a Welsh telematics project, Tomos describes the philosophy of the undertaking;

> The intention is to promote a positive view of Wales, its culture and society on the world-wide Internet whilst at the same time providing an efficient search and retrieval mechanism within Wales.
>
> (Tomos 1997: 20)

The inference here appears to be that "positive" notions of Wales and the information provided by the project's protagonists are compatible. What if they are not and who decides what is "positive" anyway? It is clear that the staff at the Central Library must consider a range of issues relating to the provision of digital technologies (including the issue of access to "unsuitable" material). Possible models dealing with access to resources have been advocated. Ormes and McClure suggest a scenario whereby a tiered level of resources is provided. Such a solution would appear satisfactory insofar as it recognises the various constituents that allow for connectivity and separates out those resources that allow access to *information* technologies and those which are appropriated for the purposes of *communication*. Ormes and McClure suggest the following model:

> No services or resources provided.
> In this situation, the public library simply provides access to the Internet. Patrons use a library workshop to access resources and services provided by others on the Internet.
>
> Resources provision.
> The library makes available information resources such as databases, electronic newsletters, local government information, etc. In effect, the library transfers patron access from printed sources to electronic sources.

Self-assisted services
This type of networked service allows the user to access resources, and without the assistance of another, put a hold on a book, make a reservation to attend a library programme, or manipulate data.

Interactive services
In this type of service the patron may engage in interactive video reference services with library staff, participate in a discussion about a best seller, or collaborate with other users in the use of particular library resources.

Knowledge based services
In this situation, the library provides on-demand, customised information services: for example, the library automatically informs the user electronically that, based on previous reading habits, a new book has arrived or a certain Web site may be of interest, etc.

(Ormes and McClure 1997: 35)

One of the benefits associated with providing tiered public access to resources is that library professionals may have more time to use electronic resources themselves. This in turn may lead to opportunities for enhanced liaison amongst the librarian fraternity. Citing advantages established as a result of work undertaken by Croydon Libraries, Kirby illustrates some of the benefits of using a networked system.

> There is ... the potential for tracing specialists in any subject ... the Internet can give many information benefits to those libraries which are connected. (Networking) can also provide opportunities for all staff to share knowledge and experience with colleagues around the world, as well as with staff in the library 'next door,' a professional advantage which would not previously have been

> available except to a few, and then only through formal correspondence and rare telephone calls.
>
> (Kirby 1997: 80)

The use of information communication technologies will provide staff at the Birmingham Library Service with an ongoing number of challenges, issues, advantages and drawbacks. Although the benefits of such systems are apparent, so too are the disadvantages. The *Images of Transition* project set out to use ICTs' in order to engage ethnic groups in a dialogue about aspects of their history and culture. Assuming such sentiments are held, I do not believe that library officers could retain their reputations as "trusted intermediaries" (New Library para 1.17) if, through such initiatives as the *Images of Transition* project , awkward and inflammatory differences within communities are exposed.

Civil Rights

Although it is essential that those within the Birmingham Library Service, as elsewhere, understand the capabilities and implications of utilising emerging digital technologies, it would be inappropriate to base such services on the premise that the provision may be abused. Telematics technologies are used by a vast range of individuals and organisations whose intentions are benevolent. On the other hand it is possible that by adopting digital technologies, library professionals could be perceived as being willing agents in the process of exchanging sensitive or private information. This perception, justified or not, does not sit comfortably with the aspirations of those within these professions who wish to remain independent and impartial. Clearly a line has to be drawn between inappropriate paranoia and an acknowledgement that communications *are* intercepted and

information collated about the activities and preferences of individuals and groups. Davis is stark in his analysis of the consequences of our adoption of emerging digital technologies:

> Civil rights activists have urged through the ages that the key rule to ensure personal autonomy and independence is never to get too familiar, reliant, or friendly with the power centres around you. In embracing the exciting new fusion with technology, we have broken this ancient law. One result is that we have now formally entered the first phase of the Post Orwellian State. The future should offer an expanding gulf between the illusion of personal autonomy and the power of large organisations.
>
> (Davies 1996: 23)

The apocalyptic scenario presented by Davis is perhaps overstated as in many respects the predilection and ability of governments and large organisations to monitor communications is nothing new. The US monitoring station at Bude was built at the height of the Cold War not to eaves drop on the communications of the Eastern bloc but the communications traffic going to and from Intelsat, the West's satellite system. Although particular forms of monitoring electronic communications contravene European Human Rights legislation such activities are believed to be widespread. On the other hand, equally intrusive practices are quite legal: employers in the UK may legitimately read the e-mail correspondence of their employees, for example. Technological developments are making the process of monitoring communications easier. A number of police forces in the UK have undertaken trials with a system that monitors telephone communications. *Harlequin* enables officers to build up a picture of contacts and associates of anyone whose number appears on the system. The aim of the software is to create a web of contacts in order to assimilate information

about known "suspects" and their "associates."

The technological developments cited are important to the work undertaken by libraries and other institutions as it is clear that both covert and overt technologies are used to monitor communications and information preferences. By adopting emerging digital communications and information systems libraries will therefore provide additional opportunities for individual's communications and information preferences to be scrutinised. "Sophisticated surveillance technology now represents virtually a new form of spatial organisation as it oversees our activities while shopping, working or visiting the public spaces of the world" (Johnson 1996: 82). Such monitoring could impact on the work libraries undertake with their users. As the *Images of Transition* project demonstrated, the sensitivity and vulnerability of some groups should not be underestimated when library personnel instigate projects. It is possible that the adoption of digital technologies and the perception that information divulged is prone to surveillance could actually hinder such work, rather than enrich it. With the number of ethnic groups entering the United Kingdom increasing, including political refugees and those seeking asylum, such sensitivities must be recognised and acknowledged by library professionals.

At a time when the library service in the UK is being perceived by government as the main provider of ICTs' to the public, it is not yet clear whether the apparently mutually supportive relationship currently enjoyed by both can be sustained. What if librarians refuse to mediate as a result of government intervention about the provision of material it deems as inappropriate? Issues relating to the holding of information could impact at all levels. The *New Library* report advocates individuals being able to access local government information, possibly with the use of smart card technology, for example. Will local government officers be able to access

information held by libraries about their users? Will protections be in place to safeguard the interests of library users? The prosecution of Felix Comm by the German authorities demonstrated that in many states existing legislation has yet to catch up with the capabilities of emerging digital technologies. This case also indicates that authorities do take punitive action when they see fit. It would be naive to suggest that staff at Birmingham Central Library would remain immune to the possibility of such actions if the photographic projects they undertake, with or without the aid of ICTs', were deemed to be illegal. Their colleagues at the University of Central England became acutely (and very publicly) aware of this when the West Midlands Police sought the advise of the Crown Prosecution Service over the University's possession of a book of works by Robert Mapplethorpe for example.

Training

In order to benefit from information communication technologies, staff and users of the Birmingham Library Service must be adequately prepared in their use. Cawkell reiterates this point and suggests that there is often

> ... a mismatch between the ebullience of the sales media and potential users. Users seem to be visualised as computer buffs able to decide which hardware and software is required, and well able to apply it to their project. They are not.
>
> (Cawkell 1994: 1)

Considering the use of digital technologies by users of the photographic collections, James holds the view that it is important that any systems procured should be "easy to use" in order that training needs are kept to a minimum. The authors of the *Birmingham ICT Strategy* also recognise the

importance of training for staff, noting that the library service runs " ... a genuine risk of encountering or alienating customers whose knowledge of 'information systems' fare exceeds that of our own staff" (Birmingham 1999: 51).

The ICT Support Team

The importance of effective training was acknowledged by the Birmingham Library Service management when in November 1998 the ICT Support Team was created. At this time Andrea Bembridge was appointed as the Electronic Resource Development Officer. In addition to " .... training and supporting the staff of Birmingham Libraries in the use of electronic systems and resources ..." Bembridge's responsibilities also include liaising with colleagues at the Assist office and " ... finding out about and exploring electronic resources for the benefit of our users." It is significant that the ICT Support Team was created at the end of the nineties. This reflects how, like others, the BLS has had to respond to the speed at which ICTs' have been adopted over the last decade. Reid and Rafferty Brown have considered the changing role of information professionals that has occurred as a result. In the mid nineties they set out to

> ... establish the nature of the main technological and economic changes impinging on the profession (in order to) identify the knowledge and skills required by information practitioners in their new role and to outline some of the principal ways in which university schools of information and library studies are responding to these needs.
>
> (Reid and Rafferty Brown 1996: 175)

At Birmingham the ICT Support Team was established primarily because of

the increase in the use of both networked and stand-alone CD Roms, the internet, and the imminent delivery of a significant upgrade to the Library Management System (Galaxy 2000). Prior to this time, according to Bembridge, " ... training and support was coming from a number of different sources and it needed to be managed more effectively."

The remit of the ICT Support Team is to liaise with staff although work will occasionally be undertaken with members of the public. Most of the time, however, the staff working with the public are able to meet their requirements. The issues and problems surrounding training at the Central Library are typical of most public library authorities, as Batterbee reiterates

> Public libraries face particular problems with training end users because the general public library user is not necessarily 'information trained.' As a group public library users have various IT backgrounds, ranging from very little experience of using IT to a few who are reasonably experienced. Having such a disparate, heterogeneous group of users makes it difficult for public libraries to provide training.
>
> (Batterbee 1996: 110)

At Birmingham staff are able to give short guidance sessions as appropriate. This is common practice elsewhere as Batterbee established. For example, when using CD Rom's most public library authorities opted for informal training. "As users book their CD-Rom sessions or collect their disc, the opportunity presents itself for staff to offer short informal training sessions" (Batterbee 1996: 111). As with most other PLA's the Birmingham staff offer "one to one training," "on-demand." Batterbee also established that few provided "documentation" to go with training and most end users are happy with 10-15 minutes sessions. "The impact of training on staff was positive - it developed staff skills. The negative impact was that it increased their work

load" (Batterbee 1996: 110).

By undertaking a skills audit each year the Birmingham ICT Support Team have been able to identify and respond to the training needs of the library staff. The team's budget covers three salaries. Whilst this would appear to be an insignificant amount in relation to the importance placed on ICTs' in the public library service generally, it can perhaps be justified, as, Bembridge states, the library staff " ... are endeavouring to move from a culture of training to one of learning, with staff taking responsibility for their own learning needs"

Copyright

Perhaps one of the most important aspects of the digitisation process which the Birmingham staff need to continue to address through ongoing training and learning is copyright. To date only limited measures have been introduced to protect the Library Service's assets. As discussed, the binary nature of digital media makes the provision of copyright protection at once both essential and elusive. It is possible that at no time since Caxton's invention, when copying became comparatively easy and automatic, as a result of "the press replacing human endeavour" (McLuhan 1967: 122) has the protection of intellectual work been more significant.

To date the Central Library staff have based the terms on which material in their custody is used on BAPLA's Picture Library Contract (discussed in **Chapter Two**). Having reviewed the legality of the digitisation

process in relation to publishing, Cornish succinctly concludes that " ... it looks rather bleak from a legal point of view" (Cornish 1997: 2). Measures to harmonise legislation between EC member states have created problems for identifying copyright owners and the digitisation of local studies material in particular.

Current law requires that before material is copied, reasonable efforts must be made to identify copyright owners. An onerous task in itself, this must be considered when assessing collections for digitisation. On the other hand, intellectual property rights and licensing opportunities may represent possibilities to generate income. Nevertheless, it has to be acknowledged that copyright law is complex.

> Today, the rendering of words, images, and sounds into digital format has quickened their dissemination, blurred author and publisher and reader distinctions to the point that fine differentiations between patent and copyright, between economic and moral rights of the creator, seem more difficult to comprehend, let alone enforce, than ever.
>
> (Levinson 1998: 188)

If the BLS staff wish to digitise and make available material in their collections then this should either be free of copyright or clearance must be obtained from the copyright owner. The scanning or other copying of a copyright item without clearance or licence constitutes unauthorised copying and is an offence under law.

Although the BLS staff can and must adhere to the basic principles of copyright, the position is complicated when photographic materials are considered. Under the copyright regulations implemented in the UK on January 1st 1996, the general rule is that, unless otherwise assigned, copyright

rests with the photographer and lasts for a period of 70 years after his or her death. However, where authorship is unknown, as is often the case with photographs, copyright can now extend for 70 years *from the date the work was made*. These changes are particularly relevant for libraries wishing to digitise local collections, as in many cases the legislation has put previously out of copyright material back in copyright. This is true of many historic photographs, where previously (under the terms of the 1956 and 1988 Copyright Acts) copyright had extended for *50 years* from the year the photograph was produced.

As discussed in **Chapter Two** exceptions to the general copyright rules exist, where, for example, works are made during the course of employment or commission. Different rules may apply to these according to the laws in force at the time the work was made. There are also some exemptions which may apply to libraries and museums, for example, copies made for preservation, replacement or collections management purposes. Nevertheless, at present the law requires that before material is copied, if the copyright owner is unknown, then reasonable efforts must be made to identify them. What constitutes reasonable effort is left open to interpretation. It is essential therefore that librarians and others approach the issue of copyright realistically as it is easy to perceive copyright issues negatively, as "problems" that have to be "overcome." It should be remembered, however, that copyright law is intended to protect the holders of intellectual property rights, which may include libraries and archives. Copyright should perhaps be regarded as the legal framework within which business is transacted, rather than as a barrier to anything being done. As networks become more common attention must be paid to the rights of contributors to ensure that their material will not be illegally appropriated or misused in any way.

Considering the issue of intellectual property rights and commercial transactions, Levinson has proposed that "smart chip" technology containing information about products creators could be incorporated in all manufactured artifacts (Levinson 1998: 203). In theory, resources permitting, institutions such as libraries could attach "smart tags" to the artefacts in their custody. One half of this model already exists, as electronic fund transfer, credit and debit cards and the digitisation of money already work to facilitate payment for property. In addition, Nelson has suggested that every document in a hypertext language could come packaged with an electronic "cash register," which pays the copyright holder a royalty, via electronic fund transfer from the reader's account, for each reading or time the document is invoked in a link (Nelson 1990). The point that both Levinson and Nelson make is that information communication technologies, rather than being detrimental to the process of assigning intellectual property can be used to the owners advantage.

> Thus powerful aspects of digital communication can strengthen the conception and enforcement of intellectual property, can clarify and tie together aspects of attribution and payment that were loose ends prior to computers, even as the plethora of texts, images and sounds disseminated by the Internet and its adjuncts undoubtedly clouds a copyright picture already unclear before the first vacuum tube was ever deployed.
>
> (Levinson 1998: 203)

Those working in libraries and archives could consider the substance of such arguments and examine the possibilities of using such technologies accordingly.

5.6 Conclusion

The difficulties associated with the use of digital photographic technologies by those working with photographic archives must not be underestimated. In recent years the staff at the Birmingham Library Service have experimented with such technologies and initiated a number of innovative projects. With their experience the BLS staff are in a strong position to consolidate their knowledge and to utilise such technologies in a meaningful and effective manner. Recognising the complexities involved it is important that the BLS staff place the needs of their users at the heart of any digital initiatives. Furthermore, acknowledging that a number of both publicly funded institutions and private organisations represent their "competitors," the staff must continue to offer digital resources in a manner that is appropriate and sympathetic to their users needs.

The realities of the digitisation process must also be recognised, whilst such resources must be funded adequately. A number of sources of funding for initiatives in libraries have become available in recent years, although the potential to exploit the archives in a more systematically "commercial" manner (in a way undertaken by colleagues in the museums sector) would warrant further investigation. Initiatives undertaken with digital technologies which have the potential to facilitate access to both information and communication is requiring those working within the public library sector to reappraise their role, particularly in relation to the global potentialities inherent in the use of such technologies. Whilst protecting both the needs of their traditional users, as well as the rights of those producers who have contributed to the photographic archive at the Central Library, the personnel at the BLS must respond to each of these challenges appropriately. With such demands this requirement should not be underestimated.

In addition to providing a summary of the substantive conclusions made as a result of undertaking this research, the following chapter offers a number of recommendations. Whilst giving emphasis to the dilemmas and issues that will need to be addressed by the library staff, the final chapter also considers possible future developments, both in terms of the appropriation of digital technologies by the Birmingham Library Service and as a continuation of research already undertaken.

Summation

In summary this chapter has outlined the following points:

- The "piecemeal" use of information communication technologies within the Birmingham Library Service has been recognised by it's own internal critics, notably the authors of the *Birmingham Library Services ICT Strategy 1999 - 2001.*
- 65% of librarians within local authorities have considered photographs as a priority for digitisation projects (Parry 1998).
- To date the Birmingham Library Service staff have been unclear about who their "Producers" and "Private Users" are when the use of the photographic collections is considered.
- Information communication technologies have have been used effectively for collections management purposes within the Conservation Department at the Central Library.
- Staff with more general skills are continuing to replace specialists, a trend which is having an adverse impact on the use of the collections.
- To date no financial audit has been carried out in order to consider the fiscal benefits or drawbacks of employing ICTs' within the photographic archives.

- The laborious nature of the scanning and digital acquisition process has been ascertained by the Library staff. As other institutions have discovered this is an important factor when issues concerned with resources are considered.
- Real artefacts continue to have an essential role in any archive.
- Training is essential if professionals are to respond to the challenge of using information communication technologies effectively.
- The same technology that can represent a threat to payment rights could possibly be used to ensure that such rights are respected.

The substantive implications of these points I believe are as follows:

- The Birmingham Library Service should undertake an audit of the users of the photographic collections prior to any substantial digital initiative.
- In order to oversee the successful integration of a range of information communication technologies the Birmingham Library Service should be proactive in fostering an "independent' and "anxiety free" environment in which digital resources can be used by a wide cross section of users.
- The good practice employed by the staff within the Conservation Department should be encouraged elsewhere.
- A financial audit should be undertaken in order to consider the economic exploitation of the archive.
- Although funding from central government is essential in order to pursue any substantive digital initiative, it cannot be relied upon.
- The Birmingham Library Service must adhere to relevant standards where selection, scanning, calibration and files management issues are considered.
- The importance of real artefacts must not be overlooked.

- A comprehensive training programme dealing with all aspects of the digitisation process must be systematically delivered to all relevant staff.

CHAPTER SIX

CONCLUSION

This research has demonstrated how the activities of photographic librarians and archivists working in public libraries continues to be redefined by advancements in digital technologies. In recent years many professionals within libraries have addressed the complexities of digitisation by devising challenging and informative projects, contributing to the " .... social, political, economic and cultural factors (which) are the prime determinants of technological change" (Winston 1998: 341). Prior to summarising the main conclusions of this work, the strengths and weaknesses of the author's research are considered in order to critically review and reflect upon the activities undertaken.

Unique value

The main strength of this undertaking is its unique value. The use of ICTs' within a public library archive holding photographic material of unique historical importance has been critically examined through both theoretical and empirical research. Although the strategy of adopting a twin approach to the research was ambitious in conception the number of partners and agencies who subsequently became involved with the empirical initiatives in particular ultimately contributed to its success. Indicative of much work undertaken with, at the time, untried technology, the scope of the research was not constrained within defined parameters at its onset. Thus, although the time required to complete the research was longer than envisaged, its strength lies in the fact that the practical application of ICTs' has been considered within a context that has questioned both the broad role of

libraries and archives and the use of digital photographic technologies within them.

As the range of statements and initiatives relating to information communication technologies within libraries and archives cited in the **Introduction** makes clear, the research has been undertaken during a time of considerable debate and clarification of policy. At the time of the commencement of the research librarians and archivists had only just begun to explore the use of digital technologies in order to provide access to and assist in the preservation of photographic resources. I believe that the hitherto circumspect attitude of those working in libraries regarding the public use of information communication technology has in part been attributable to an inability by library professionals to form a vision for the service. As elsewhere, the views of the senior management at the Birmingham Central Library have been cautious. Nicholas Kingsley, Head of Archives, has advocated the creation of a "hybrid" library, incorporating a mix of both "new" technology and traditional means of holding, finding and accessing information. John Dolan, Head of Birmingham Central Library, meanwhile, has warned that "today's technology could become the dusty bookshelves of the 1890's," noting that as libraries exist primarily as receptacles of information technology they can only ever act as a vehicle to allow access to such information. However, having instigated a number of projects utilising ICTs', it is clear that the staff at the Central Library are now well placed to consider the social, political, economic and cultural benefits of such technologies. To achieve this aim it is essential that staff determine who the users of the photographic collections are: an audit of the whole archive would contribute to the process of identifying the specific needs of the Birmingham Library Services "Producers" and "Private users."

This study began with an examination of the public library service at

the beginning of the twenty first century along with the role of photographic archives within this provision. The research then went on to consider possibilities associated with the utilisation of digital photographic technologies. Questions relating to the appropriation of information communication technologies by photographic archivists and curators in the public library sector were in part answered through the empirical research undertaken. This aspect of the study culminated in the creation of a digital resource accompanying the *Coming to Light* exhibition held in 1998. Here I summarise the ramifications of the findings derived from the research in addition to making suggestions for further work.

Collaboration

Whilst developing and providing new digital services it is important that library professionals do not work in isolation. In addition to strengthening collaborative links with other sectors, including those in education for example, it is important that in order to avoid costly duplication of research future initiatives in libraries should take account of parallel (and often overlapping) trends in the museum sector in particular. Indeed, research undertaken across Europe in the late nineties indicated that "... the kind of IT development problems facing major archives, documentation centres, libraries, museums, archaeological and industrial heritage agencies are very similar" (MUSEA 1997).

In Birmingham the advantages of collaboration between the library and the museums service have been recognised for many years. It would appear that the institutions may come closer together still through the sharing of digital resources. Having brought a degree of coherence to the self funding Birmingham Museum and Art Gallery Picture Library, the recently

appointed picture librarian, Ian Harrison has explored the benefits of working with the Library Service. In liaison with library staff Harrison has begun to consider the use of digital resources in order to draw the library and museum's collections together. As the authors of the *Birmingham ICT Strategy* have noted, the aspiration to create a "Birmingham Picture Library" is in accordance with that of the Central Library Development Plan, which includes an objective " ... to develop the library to meet the needs of its local studies and ... photography collections ... (involving) the creation of new facilities to open up, through digitisation, the historic and rare collections of the library ..." (Birmingham 1999: 27). Apers et al suggest that the use of digital technologies is particularly suited where information is shared amongst more than one institution, as advocated by Harrison and his library colleagues.

> The benefits of multimedia database management systems are especially pronounced in areas where groups of (multimedia) information producers create complexly structured multimedia information that has to be kept and manipulated/updated over longer periods of time, and that will be accessed by a multitude of information customers each looking for "individualised" information to satisfy particular needs.
>
> (Apers et al 1997: 32)

Clearly the importance of the symbiotic relationship between libraries and museums expressed by Whitworth-Wallis in 1888 still prevails. As the *Coming to Light* exhibition successfully showed the archive holdings of the Birmingham Library Service compliment the collections of the museums division. Digital technologies could, I believe, enhance this relationship further. However, prior to undertaking any further collaborative ventures with digital technologies, it is essential that the Birmingham Library Service undertakes an economic appraisal of the benefits of ICTs'. I concur with Smith who has reiterated that although offering advantages, the library staff

must recognise that some of the cost reductions and benefits associated with ICTs' can be illusory. Furthermore, whilst the library staff could look to market the photographic collections commercially, any such initiative must allow the core activities of the library to continue. Support for any such venture would need to be given at the highest level, whilst the financial risks would have to be acknowledged by all involved.

Funding

Although various sources of public funding for digital initiatives have been available in recent years, as has been seen, these cannot be guaranteed in future years. The uncertainty over the operation of the National Lottery placed in question the availability of revenue hitherto available to public libraries for example. Moreover, with on-line provision becoming increasingly commercialised I believe that it is essential that the pubic library system is perceived as being independent. Although in the light of these commercial trends it is perhaps more important now than at any other time that public libraries provide free access to ICT resources, particularly for those users unable to "buy in" to on-line services, it must also be acknowledged that the commercial exploitation of the photographic archive at the Birmingham Central Library could be used to subsidise the provision of digital services. I would suggest that the possibility of marketing those images with commercial worth should be investigated as a matter of urgency.

The work undertaken at the Central Library has demonstrated that the production of digital content involves a number of time consuming and complex processes. The experiences of the Birmingham Central Library staff reinforce the need for a central source of expertise in digitisation in the local authority library sector. Parry suggests that such a body could ".... advice on

technical and standard issues, selection and copyright, record and monitor projects, focus research and advice on and channel funding to facilitate network access." (Parry 1998: 28). At present there appears to be considerable, expensive and potentially wasteful duplication of effort in the development and evaluation of technical systems and in the acquisition of basic technical knowledge and expertise. This situation reflects the fact that photographic collections in local studies sections have to date been the main focus for digitisation projects within many public library authorities as they have been perceived as meeting important criteria including improving access, protecting vulnerable originals and meeting local public demand. Furthermore, as the *Coming to Light* project demonstrated, the use of digital technologies continues to be attractive to funding agencies. Within the Birmingham Library Service projects have been endorsed by funders despite the failure of the staff , who, with the possible exception of personnel within the Conservation Department, have been largely unsystematic in their use of information communication technologies.

To date the application of digital technologies by the staff within the Conservation Department of the Birmingham Library Services has been methodical and considered. The use of digital resources has been carefully researched, procured, executed and evaluated. Furthermore, the Head of Conservation, Tony Barrett has considered the expansion of the digital work undertaken within his section. The possibility of using a digital camera has been explored in order to produce images of artefacts before and after repair. Staff are using the same equipment to record talks, conferences and exhibitions. Whilst going beyond their remit no other staff within the BLS are using digital photographic technologies in this way. Barrett feels that despite initial reservations about the use of such technology he is satisfied with the manner in which it is being used. "Given our resources things are quick and doable." The work undertaken by staff in the Conservation Department has

demonstrated the importance of good practice in the procurement and use of digital photographic technologies. Having experimented with digital technologies, Barrett would particularly like to see more exchanges of ideas between the library and conservation fraternities, noting that an area of common interest is the consideration of standards.

Standards

The adoption of standards across the activities of libraries, archives and museums would appear to allow for both cross-domain resource discovery and interoperability by users. At present these sectors each have their own documentation standards and bodies to which reference must be made. Examples include bibliographic standards such as AACR2 and MARC and the Z39.50 protocol for network access to databases. Standards for archival description include the General International Standard for Archival Description (ISAD(G)), the International Standard Archival Authority Record for Corporate Bodies, Persons and Families (ISAAR(CPF)) and the National Council on Archive (NCA) Rules. The Museum Documentation Association produces the SPECTRUM standard, whilst metadata standards have been considered under the Dublin Core and Warwick Framework. Meanwhile the National Preservation Office's Digital Archiving Working Group (DAWG) has co-ordinated information on preservation standards. It is essential that the staff undertaking work with the photographic collections at the Birmingham Central Library acquaint themselves with such standards and ensure that any work undertaken conforms as appropriate. Regrettably, to date the projects at the Central Library have been carried out without reference to relevant standards. This has created resources which may be very useful but which may lack the capacity to become part of any present or future resource network, or to stand the test of time technically.

Risks

Whilst it has been seen that the Birmingham Library Service staff may in theory use a range of digital technologies in order to facilitate work undertaken with the photographic collections, it is important to acknowledge that many factors could prevent the successful development of any future initiative. The authors of the *Birmingham ICT Strategy* have identified factors that represents risks to any future proposals. These are:

> Under performance by private sector ICT suppliers
> Dependence on other parts of BCC for critical ICT delivery
> Shortage of professional ICT skills for e.g., network management or PC software installation
> Lack of Lotus Notes developmental or administrative support
> Mismatch of expectation and resource leading to staff alienation
> Delays in Government and other timetables
> Resource constraints
> Gap between strategy and implementation
> Lack of urgency
> Loss of staff commitment and support
> The pace of ICT developments
> Distraction by other priorities
>
> (Birmingham 1999: 27)

The risks identified by the authors of the *Birmingham ICT Strategy* can of course be applied to work undertaken with the photographic archive at the Central Library. Here I believe that it is essential that staff take on responsibilities appropriate to their skills and abilities. As the strategy suggests, staff undertaking tasks inappropriate to their abilities may lose commitment to any initiatives undertaken. In order to reduce the possibility of such occurrences, training, undertaken in a systematic, co-ordinated manner for both library personnel and users must continue to be given

serious consideration.

Adequate training and staff development can ensure that personnel working within the library service in Birmingham, as elsewhere, continue to address the fundamental differences between information and communication in relation to the use of digital technologies. Staff must also continue to understand and respect the views of those library users who do not wish to use digital technologies. Furthermore, as the empirical work demonstrated, time and patience will be required where citizens are using information communication technologies, perhaps for the first time. It is essential that staff recognise the needs of all their users and respond appropriately and sympathetically.

In addition to addressing the need to respond appropriately to users, it is likely that training will also be necessary to ensure that copyright legislation is effectively considered where digital technologies are utilised. Here the staff within the BLS must do more. The system at the Central Library which relies on the honesty of users to indicate whether or not materials from the Local Studies and History section are to be used for commercial purposes is clearly open to abuse. This example illustrates that the library staff must be more rigourous in their approach to intellectual property rights, seeking specialist advice as appropriate. The point that copyright legislation exists for the protection of the Library's assets must be understood and continually reinforced. In addition to ensuring the appropriate and legal use of materials in their custody, library staff must also make sure that any existing or future digital resources are not violated.

In providing access to existing and potential digital content commentators such as Jordon (1999) have suggested that libraries might unwittingly be contributing to the resources of a society that is receiving "too

much" information. Although this notion might seem paradoxical (particularly to library professionals), it is likely that users can only assimilate finite quantities of information. As Shenk has suggested, information may not be absorbed, whilst the important cannot be distinguished from the unimportant.

> Information overload threatens our ability to educate ourselves, and leaves us more vulnerable as consumers and less cohesive as a society. For most of us, it actually diminishes our control over our own lives, while those already in power find their positions considerably strengthened.
>
> (Shenk 1997: 15)

In the light of such observations, it is imperative that the artifactual value of photographic collections is not overlooked. It is clear that despite the allure of the digital appropriate access to original materials must be maintained in order for the full research value of these resources to be realised. Furthermore, whilst it is essential that staff " ... develop an ambitious programme which advances Birmingham's position and capitalises on (its) unique resources" (Birmingham 1999: 58), whatever future projects are undertaken it is important that the library staff fully understand the limited preservation role of any such technologies. "Digital technologies do not provide images that can replace original materials. Except insofar as surrogates can lessen or eliminate risk to documents, digitisation is not a preservation medium" (Columbia University Library 1998).

Staffing

The research with digital technologies undertaken at the Central Library has demonstrated that the role of the archive within the structure of

the Birmingham Library Service will influence the way in which such technologies can best be appropriated. At the indices of two professions, each with different needs, the agenda of those working with the archive is often at variance to that of their library colleagues. Working across the library and the archive, as Head of Photography, Peter James' role and job description is influenced by the institution in which he works. I would argue that the appointment of an individual responsible for the application of digital technologies within the photographic archive is essential if such technologies are to be effectively utilised whilst not over burdening those members of staff already in post.

Although it is clear that those associated with public libraries have yet to resolve a number of issues relating to the provision of access to information communication technologies, it would be inappropriate to emphasise the shortcomings of the profession in this area. It is undoubtedly a good thing that the profession continues to be engaged in "... the project of finding applications for, and making sense of, the possibilities offered by the new communications technologies...." (Greenhalgh and Worpole 1995: 23). It is clear that in years to come the public library service will continue to provide access to ICTs' to a range of users, not least those who are denied access to such technologies for economic and cultural reasons. Whilst the importance of providing information technology resources to minority groups and children has been recognised (See Denham et al), in the foreseeable future the librarian may well "... have an important role to play in helping and coaching people in IT (in order) to maintain a 'human feel' ... encouraging those people with 'techno-fear', (who are) worried about the 'coldness' and inaccessibility of IT" (New Library Para 2.5(f)). Moreover, with a potential global user group, those responsible for the management and evolution of the service in Birmingham will be required to strike a balance between addressing the exciting possibilities for communication and

information sharing with the more immediate, perhaps mundane, needs of users who both pass through the doors of the Central and branch libraries, as well as those served through the range of outreach activities undertaken.

Preservation v Access

The research has identified problems associated with the existence of a substantial photographic archive residing within the confines of a public library resource. In Birmingham, as elsewhere, this dichotomy has been exaggerated by the tensions prevalent where the *preservation* role of the archive has been subsumed within the institution of the library, which has a remit to provide *access*. (These problems have been graphically illustrated by the, albeit benevolent, butchering of the Warwickshire Photographic Survey archive.) I believe that digital technologies can in part help to address such difficulties. Sekula and Schwarz have highlighted the importance of archives in exerting "basic truths" in our understanding of photography as "memory institutions" through the manner of their organisation and use. Ostrow, meanwhile, has argued that the strength of an archive invariably lies in its "completeness." Paradoxically, however, digitisation, by necessity, implies selectivity: economic, technological and human limitations impose restrictions on the size of any digital provision. Nevertheless, by offering digital resources institutions can overcome some of the tensions and difficulties associated with the dilemma's inherent in attempting to provide both a preservation and access role. Original artefacts can at once be both protected whilst some of the (albeit limited) information in those objects can be disseminated to a wider user-audience. The practical activities undertaken by the Birmingham Library Service have demonstrated that such institutions should only attempt to provide such resources when the all the means to do so are put in place.

Whilst many professionals within libraries and archives divisions continue to try and make sense of technologies that may (or may not) have a part to play in the preservation and access of photographic materials - and in doing so finding what Noble (1984) describes as "unintentional consequences and unanticipated possibilities" associated with technology - the "privatisation" of information consumption and communication processes noted by Williams in the early seventies appears to continue. Although by definition *public* organisations, libraries will nevertheless be required to address the needs of users who are increasingly undertaking "independent" and "autonomous pursuits." If the growth in the use of both off-line and on-line digital technologies continues to prevail it could be that the power of libraries as " ... instruments of social and political change" is diminished. However, I have no doubt that in order to remain in Irwin's words " ... one of the foundation stones of human society" those responsible for the provision of libraries will continue to allow the service to evolve in order for it to reflect the wider needs of the community of which it is part.

Alternatives

One factor impacting on the evolution of the library service in the United Kingdom will be the proliferation of alternative sources of information. In future I believe the provision of "free" public access to networked services in libraries is likely to become increasingly important as multinational corporations continue to dominate on-line content. Here Doheny-Farina and Golding consider the influence of the so called Big American Net Companies (the BANC) that have come to dominate on-line provision.

> Although these companies offer access to the Internet, their primary service has been to create microcosms of the Internet, each with a national reach. That is, a subscriber to one of these networks can communicate with other subscribers around the nation through asynchronous discussion forums and synchronous chat session, and can conduct research through information search-and-retrieval services.
>
> (Doheny-Farina 1996: 48)

Dohena-Farina goes onto predict that

> ... the most likely manifestation of the information highway will be whatever network is created by the broadband communications giants. These are the evolving mega-corporations that control an ever-shifting combination of media among telephony, cable and broadcast television networks, movie and television studios, cellular and satellite communications and computer hardware and software.
>
> (Doheny-Farina 1996: 48)

Golding reiterates Doheny-Farina's observation suggesting that

> We hear a lot about the convergence of the communications and information industries. What is meant by this is the technological dissolution of distinctions especially between telecommunication, computing, and broadcasting, that is made feasible by digital technology ... Thus the distribution and delivery of previously distinct forms of communication become fused, potentially, into a single form and format. While a significant and potentially revolutionary feature of telecommunications technology, this aspect of convergence is, thus far, less manifest than the convergence effected by the large global companies that produce and supply much of the cultural material that makes up the symbolic

landscape in which most of us live.

(Golding 1998: 71)

Although the staff at the Central Library have a role in providing access to resources and content which may offset some of the influence of those powerful corporations cited by Doheny-Farina and Golding, Brown suggests that by encouraging the use of networks, (local) institutions such as libraries may inadvertently contribute to their own demise by creating "... a world in which technical *connectivity* starts to subtly undermine the essentially ethical ties needed to bind and sustain communities, economies, and entire political systems" (Brown 1997: 4).

I believe that trends cited by Brown are unlikely to prevail. Far from undermining their position, irrespective of future trends in the use of ICTs', libraries will no doubt continue to represent "an asset that helps local people identify with their community," the view expressed by Wagner and endorsed by the authors of the Aslib *Review of Public Libraries in England and Wales* amongst others. Ang believes the consequences of the actions of those companies described by Doheny-Farina and Golding will lead to " ... the emergence of truly global, decentred corporations in which diverse media products ... are ... combined and integrated into overarching communications empires" (Ang 1996: 142). Ang goes on to consider that this process will be

> ... accompanied by an increased pressure towards the creation of transnational markets and transnational distribution systems (made possible by new communication technologies such as satellite and cable), transgressing established boundaries and subverting existing territories undoubtedly having profound political and cultural consequences.
>
> (Ibid)

Through the provision of materials that reflect and celebrate local and, (as is the case in Birmingham) national distinctions, I believe that it is likely that public libraries will have an increasingly important role in offsetting some of the "profound political and cultural consequences" described by Ang et al.

In future it is likely that the range of work undertaken with resources within such institutions as libraries, museums and archives will become ever more important as the trend towards globalisation continues. Some of this work will encompass ethnography which, Ang suggests

> ... should not just reside in romantically discovering and validating diversity and difference in an increasingly homogenous world: it can more ambitiously - and with a greater sense of unequal power relationships across the board - work toward an unravelling of the intricate intersections of the diverse and the homogeneous, the complicated interlockings of autonomy and dependency.
>
> (Ang 1996: 143)

Whilst appearing to endorse Ang's scepticism of the "decentred corporations" that have come to dominate global communications, Dawson and Foster attach particular importance to the possibilities of giving a (global) voice to (local) citizens.

> The social struggle needs to be conceived and carried out in the largest terms if it is to succeed. The struggle for non-commercial communications must be a core part of the battle waged by each social movement in a broad, radical alliance of social movements. The critique of existing communications must reach beyond a shallow critique of commercialisation and extend to monopoly capital and the global system itself.
>
> (Dawson and Foster: 1998: 64)

Pursuing the same theme Brown believes that

> Too little heed has been given to the momentous economic, social, and political consequences of a disequilibrium - fuelled by a combination of technology and deregulation - which may ultimately undermine the digerati's loftiest dreams.
>
> (Brown 1997: 18)

By providing access to a broad range of digital technologies I have no doubt that those responsible for public libraries can begin to reassert the influence of these institutions at a time of massive technological and economic upheaval. Such aspirations mirror the ambitions of those that drove the need for the 1850 Public Libraries Act, coming as it did during a period of considerable social and political reform. It is no coincidence that the technological and industrial advancements made at this time enabled those intrigued by the new medium of photography to begin to explore its ability to capture and record the manifestations of the transformations occurring in their midst. One hundred and fifty years later the infrastructure and systems now exist to allow library professionals working with the myriad number of photographic images produced since its invention to exploit digital technologies effectively. The bits of the virtual jigsaw have been created. The challenge now is to complete the picture.

Recommendations

Whilst recognising the value of the experimental work undertaken with information communication technologies in recent years, BLS staff should now adopt a strategic approach in formulating policies relating to the integration of digital technologies within the photographic archive. In devising such strategies the staff may wish to drawn upon the following recommendations made as a result of completing this research.

- Recognise, acknowledge and draw upon the successful use of digital photographic technologies within the Birmingham Library Service to date.

  - Staff can take a lead from the Conservation Department which has successfully researched, procured, executed and evaluated the benefits and drawbacks of using digital technologies.

  - Where the use of digital technologies is encouraged understand that the (often disparate) agenda's of the Library's various funding agencies may not necessarily be in accordance with the ambitions and capabilities of the staff involved

- Undertake an economic appraisal of the use of information communication technologies within the photographic archive.

  - Undertake an audit to establish who the archives "Producers" and "Private Users" are.

  - Strengthen links with the Birmingham Picture Library in order to consider the commercial exploitation of the archive in order

to enhance revenue.

- Address copyright issues more professionally, and ensure that the use of information communication technologies does not lead to the erosion of property rights.

- The management of the Birmingham Library Service should consider the appointment of a photographic digitisation specialist in order to both alleviate the pressures on the existing staff and to co-ordinate key areas of good practice, including

  - keeping abreast of key policy initiatives, from central government downwards.

  - the adherence to relevant standards.

  - training in order to ensure that staff take on duties commensurate with their role and abilities.

  - taking on a (sympathetic) mediation role where information communication technologies are utilised.

  - ensuring that digitisation projects only occur where all the economic, technological and human resources will allow these to be successfully concluded.

  - addressing the tensions that exist where *nationally* important material resides within a *local* public authority archive.

- Whilst continuing to evolve innovative digital projects staff must nevertheless recognise the importance of real artefacts to the archive's many users.

- Staff must fully understand that digital technologies cannot be used as a preservation medium in their own right.

- As with their colleagues nationally staff within the Birmingham Library Service must devise appropriate policies relating to their role both locally and globally.

- Consolidate links with key partners (particularly the museums service) both within the region and beyond in order to minimise the likelihood of duplicating costly research and development work.

- Consolidate links with key partners both within the region and beyond in order to both participate fully in the evolution of an electronic library service for the twenty first century and to continue to provide "free" access to information for all.

- Lobby appropriate agencies in order to establish a central (national) source of expertise in the digitisation of archival photographic ephemera.

- Where digital resources are utilised by a wide cross section of users aim to foster an environment that is genuinely "independent" and "anxiety free."

APPENDICES

Appendix 1

QUESTIONNAIRE FOR USERS OF THE 'COMING TO LIGH T' MULTIMEDIA PROGRAMME

Please use the programme before answering this questionnaire. Read the questions fully and tick the box next to your answer(s). Thank you.

1. Do you have any experience of mulimedia programmes?

Yes No

2. Have you ever used a multimedia programme in a gallery or museum exhibition?

Yes What kind of information did the programme contain? No Go to Q4
Text Animation Images Sound Video

3. Was the interactivity of the programme

Excellent Good Acceptable Poor Unacceptable

4. For the "Coming to Light" programme do you think the navigation system for moving from section to section is

Excellent Good Acceptable Poor Unacceptable

5. Do you think the reproduction and display of the photographic images is

Excellent Good Acceptable Poor Unacceptable

6. Was the legibility of the text

Excellent Good Acceptable Poor Unacceptable

7. Do you think the visual design of the programme is

Excellent Good Acceptable Poor Unacceptable

8. Compared with the information in the exhibition, was the information in the programme

Excellent Good Acceptable Poor Unacceptable

9. After using the programme, was the enhancement of your overall experience of the exhibition

Excellent Good Acceptable Poor Unacceptable

10. What potential contribution can multimedia programmes like "Coming to Light" give to traditional exhibitions?

Excellent Good Acceptable Poor Unacceptable

11. Would you choose to use a similar programme in another exhibition?

Yes No

Thank you for completing this questionnaire

Appendix 2

History Van web-site Discussion Paper

Agenda of meeting 3 April 1996 at Birmingham Central Library

Present

Andy Mabbett (Birmingham *Assist*), Dr Bob Hendley and Mark Robbins (School of Computer Sciences Birmingham University), Richard Albutt and Peter James (Birmingham Central Library)

The following discussion paper formed the agenda of the meeting:

Birmingham Assist - Birmingham Libraries Photography Archive

Alan Morris MPhil/Phd Research

Discussion Paper

I have written this paper to provide a context and framework for discussion about possible ways forward, linking *Assist* with Birmingham Libraries photography archive and my research. This paper has been formulated after discussions with the separate parties involved but is, of course, intended to be amended and clarified.

Aims and Objectives of Birmingham Libraries use of Telematics

- to *promote* its photographic archival work
- to reach a wider audience both nationally and internationally
  (build on coverage associated with recent BBC series "Underexposed" - they could be involved with future developments?)
- to *collect* images to add to its archives
- to fill up gaps in the collections: eg, to obtain images from ethnic communities etc

- to investigate the *economic potential* of telematics

- use links to examine commercial use of the collections for revenue

- *1998 Year of Photography* Exhibition tie in

- Application currently being made with Birmingham Museum and Art Gallery for large exhibition in Galleries 12 and 13

- Gallery 13 Historical images

- Gallery 12 Multimedia element: issues around how photo's are read?

- CD Rom element=Alan+Wolves students?

- Telematics element=Alan+Andy+Bob/Mark/Oliver

Possible Content of WWW site

- 100 images approx suggested by Bob (Spanish student to assist?)

- 20/30 images from the main collections,

- to provide a context for the site and to promote its importance nationally and internationally: eg, Frith, Fenton, Dyche, Warwickshire Photographic Survey

- 70/80 images drawn from images obtained on the History Van

- role and work of the History Van to be redefined with these projects in mind?

- Use site to explore other possible projects

- eg.use FTP to involve other communities with collection and consideration of photographic images nationally and internationally?

Issue to Clarify

- Analysis of what the Library wants to do with telematics

- further detailed research to be undertaken before content of www site is decided?

- Ascertain broader context of this work

- ensure that it is not replicating work undertaken within the city elsewhere

- examine other models

- Framework for participants roles and communications between them

- set up a 'working party' ?

Appendix 3

Birmingham Assist - Birmingham Libraries Photography Archives Project

Alan Morris MPhil/Phd Research

Report of meeting held at Birmingham Central Library 3 April 1996

The results of the meeting were summarised in the following paper circulated to the participants:

Present

A.Mabbett, R.Hendley, M.Robbins,R.Albutt, P.James, A.Morris

The main outcomes of the meeting were as follows

1.
Richard Albutt and Alan Morris will compile a selection of images from the Library's archives suitable for dissemination and utilisation by the education sector, particularly primary and secondary schools. The number of images has yet to be decided: probably in the region of 30/40 or thereabouts. This site will be specifically targeted at schools. This material will be provided to the University at the earliest possible date.

2.
Richard Albutt and Alan Morris will compile a selection of images drawn from material collected on the History Van. Around 100 images will be placed on the site, 80/90 drawn from the Van, 10/20 from the main collections. The images from the collections will provide a context to to Library's photography work in general. Peter James will provide an explanatory text to this material and will be consulted after an initial selection has been made. This site will be directed at the general public. The images and associated copy will reflect this. Richard Albutt and Alan Morris will endeavour to collate this material for authoring by the University for the week beginning 29 April 1996.

4.
The *Assist* pages will provide a link to a page devoted to Alan Morris' research. Alan Morris will provide the copy for this- probably amending the previous copy supplied to Andy Mabbett and passed on to Mark Oliver earlier in the year.

5.
Mark Oliver will show Andy Mabbett, Richard Albutt, Peter James and Alan Morris the *Assist* pages at the University on 11 April. The group will also use this opportunity to fact find about other related sites on the World Wide Web.

6.
The economic potential associated with telematics will underpin the work undertaken by the group.

Coming to Light Multimedia Element

Draft outline of content, production, budget and schedule

1.0 Introduction

This document was compiled after a discussion about the multimedia component of the *Coming to Light* exhibition between Peter James and Alan Morris on 11 July 1997.

2.0 Selection of material

Peter James will select material for the gallery component of the exhibition as on ongoing process to be completed by the end of December 1997. James will select in the region of 100 - 120 separate images.

3.0 Scanning

Peter James will arrange for all selected material to be copied onto 5x4 transparency. These transparencies will be forward to Dunn's Professional Imaging for scanning and digitisation as part of the sponsorship deal with the company. Dunn's may need to produce a 35mm dupe for this process: this possibility to be investigated with Andy Hughes.

4.0 Off-line and on-line provision

All 120 (approx) images on the gallery walls will be included in the multimedia component. The facility in the gallery will be off-line and stand alone. However, subject to negotiations with other partners, (Assist, Photopack, Wolverhampton University) the material collated will hopefully be replicated as a web site. There will be no provision made for viewing this on-line material within the *Coming to Light* exhibition galleries in the Museum and Art Gallery, other than via on-line kiosks provided by the City within the building during the time of the exhibition.

5.0 Viewing hardware

A suitable kiosk type installation will be required to house the hardware required to view the material. The Library plans to purchase this kiosk and hardware (a sum has been set aside in the provisional budget) in order that after the exhibition in the Museum and Art Gallery the same material may be viewed in other locations as a touring exhibition. Research will be needed to acquire an appropriate installation set up.

6.0 Off-line content

Alan Morris will require from Peter James all the visual material (scanned images on Syquest) and the written captions prior to the production of the piece. The content will be made up of the following:

1.
The interface designed by Dave Ashley and Matthew Jones at the University of

(It is hoped that David Ashley and Matthew Jones will take this interface and develop it for the specific *Coming to Light* project . A sum has been set aside in the provisional budget to allow this to happen. Negotiations will need to happen with Ashley and Jones at the earliest opportunity to ensure their continued involvement with the project or in order to find other multimedia designers with authoring skills who will be able to take up the project.)

2.
All 120 images to form the basis of a mini database

3.
Information about the Library's collections

4.
Information about the implementation of new technology within the Library including information about Alan Morris' research

5.
A layman's guide to digital photography and archival processes

6.
A credits section

7.
Links to other organisations and where on-line, other web sites.

8.
Information about other agencies in the city and examples of the their work (BCMA, Photopack, Seeing the Light et al). This element forms the basis of the Library's WMA Local Funding Agreement.

At the time of writing, negotiations are being undertaken with Photopack who have undertaken independent research in this area, specifically with the view of placing such information on the city's *Assist* pages. The responsibility of acquiring the material for this component and liaising with the agencies involved may be devolved to Photopack as a discrete activity: a sum has been set aside in the provisional budget to allow this to happen.

9.
From the 120 (approx) images selected, 6-10 will be used as case studies to highlight how new technologies may be employed in order to interpret archival photographic material. Specifically, the multimedia package may be used to explore *themes* that allow photographs to be reinterpreted in a unique manner. The following themes have been identified as a starting point, whilst further work and clarification needs to occur:

i. Contextualisation
Images and books by Debroni may be utilised

ii. Narratives and hyperlinks
Traditional books can only be viewed one page at a time. In an exhibition context, sometimes only one or two pages are available to view as the book has to be kept under glass due to the fragile nature of the document

iii. Photographers can have a voice
Video and sound can be employed in order that photographers may speak about their work to the public. Photographers could be invited to talk about their work

iv. Preservation
Material that could not otherwise be shown (ie glass plates) can be exhibited on screen

v. Curatorial processes

A section might describe how the Coming to Light exhibition was put together, why certain images were selected, why they were placed where they are, what written material accompanies them and so on. Through the multimedia component, the public could be invited to curate their own "virtual" exhibition utilising the layout of the gallery and the material available for selection.

7.0 On-line content

It is envisaged that the on-line version of the *Coming to Light* exhibition will replicate the off-line, gallery version. To facilitate this clear instructions will be required from the host server provider as to how the material will be authored. A suggestion has been made by Andy Hughes at Dunn's Professional Imaging that the off-line material is authored in html in order that this may be transferred to a web site. Advice will need to be sought in this area and responsibilities clarified in terms of who is providing what to who and when.

8.0 Production team

Producer	Alan Morris Responsible for the day to day production of the piece and the collation of material. Will act as the main liaison between the various partners
Directors	Peter James and Alan Morris Will shape the structure of the piece in liaison with the programmers and designers
Writer	Alan Morris and Peter James Alan Morris will write all the text for the piece for final consideration and approval by Peter James
Photographer	Richard Saddler
Designers	David Ashley and Matthew Jones
Programmers	David Ashley and Matthew Jones
Sound	David Ashley and Matthew Jones
Video	David Ashley and Matthew Jones
Scanning	Dunn's Professional Imaging
Film Processing	Dunn's Professional Imaging
Technical Advisor	Andy Hughes

8.0 Budget

This budget is designed to give an approximate indication of costs incurred

	£
Producer	4000.00
Photopack (Work with agencies, on-line provision)	3000.00*
Design, programming	4000.00
Film (To be supplied Fuji as sponsorship)	00.00
Film processing	100.00
Scanning 150 images at sponsored rate by Dunn's	1500.00
Materials for collation of digital data (Syquests)	200.00
Kiosk shell	300.00
Touch screen hardware and software	600.00
Main hardware (eg Power Mac)	1200.00
Total	14,900.00

9.0 Schedule

July - December 1997

Production Team clarified
Draft copy produced
Photographs selected

1998

January
Slides Produced

February

Copy finalised
Scanning

March - August

Production period

September
Completion

* Funds not required if Photopack are successful with their Arts Council bid for £12,000 ?

Coming to Light On-Line Provision

Report of meeting on 23 July 1997 at Birmingham Central Library

Present

Peter James (Head of Photography, Birmingham Library Services) Andy Mabbett (Development Manager, Birmingham *Assist*) Des Farrington (Information Manager, Birmingham) Alan Morris (Phd Research Student, University of Wolverhampton) Jurgis Lucas and Yasmin Baig (Photopack)

Background

Peter James began the meeting by providing background information to the *Coming to Light* exhibition. This is is be a large exhibition to coincide with the 1998 *Year of Photography and Electronic Imaging*. The aim of the exhibition will in part be to showcase the valuable cultural resource of the photographic collections within the city. It is to be hosted in two galleries of Birmingham Museum and Art Gallery from September 1998 to January 1999. James has sufficient funding for a traditional 'hardcopy' catalogue. In addition, James has £10k from West Midlands Arts for a digital catalogue which will be both off-line and possibility on-line. However, due to the regional nature of its remit, West Midlands Arts have requested that Peter James provides more than just in depth information about the Library's collection. 50% of the product should provide information about photography projects and facilities within the Birmingham area. James can make an additional £5k available from his own funds, allowing £15k to be spent on the project. Dunn's Professional Imaging are also contributing to the project as are other sponsors. Whilst developing these plans Peter James had established that Yasmin Baig and Jurgis Lucas had, independently, been undertaking research into the provision of an on-line catalogue or directory of photography facilities and projects in the region. James explained that Alan Morris will be employed to co-ordinate the on-line and off-line components of the project as part of his research

Interactivity

Both Andy Mabbett and Des Farrington agreed that *Assist* could be involved in this project and responded favourably to the concepts outlined. This is the type of project that *Assist* would wish to become involved in. However, Andy

ike to see some degree of interactivity in the on-line provision. This would involve copyright issues and the construction of disclaimers if the public are invited to submit their own images as part of the project. Andy Mabbett suggested that any kiosk provision within the Museum and Art Gallery is on-line, with an opening front page directing visitors to either the photographic section or to the rest of *Assist*. Des Farrington mentioned that the Museum and Art Gallery has four kiosks already and we might be able to borrow one of these second hand for the duration of the show

Download Times and Scanning

Andy Mabbett mentioned that if the material is to be on-line download times for the images could become an issue. There needs to be a balance struck between the file sizes of the photographs disseminated and their subsequent size and the time it takes to download this material. Technical advise will need to be sought to clarify what options are available to address this issue. Andy Mabbett and Des Farrington made it clear that they could not be responsible for scanning the material. Peter James mentioned that Dunn's were taking on this responsibility as part of their sponsorship deal.

Corporate Design

Andy Mabbett felt that the pages created would need to embrace some of the corporate design guidelines created for *Assist*. As a bare minimum the *Assist* logo should appear somewhere on each of the pages, if only to allow the user to go back to the site.

Lotus Notes and HTML compatibility

Andy Mabbett and Des Farrington mentioned that *Assist* will be using Lotus Notes as its authoring package. The rationale behind this is the compatibility this software offers in the creation of the city wide Intranet. Andy Mabbett mentioned that our designers should ideally create the pages on Lotus Notes, rather than converting HTML material. Des Farrington felt that it probably was possible to convert HTML material but that they had not yet worked out how to do this. By the time the project is fully up and running and the designers are beginning to create the pages Des Farrington felt that this problem may have been resolved. A suitable conversion utility may have been found.

Andy Mabbett suggested that the project is clearly defined in terms of the various individuals and partners involved and their respective responsibilities. A clear hierarchy of responsibilities should be established to check the appropriateness and validity of the material disseminated. Andy Mabbett suggested that the City appoint an employee as a 'Project Sponsor' and that Peter James would probably be the most appropriate person for this role. Peter James would have ultimate responsibility for the material put out.

The Directory

Andy Mabbett and Des Farrington asked Yasmin Baig and Jurgis Lucas for a description of the Directory material. They said that they had identified around 15 organisations who could be represented. Yasmin explained that this aspect of the project was contingent on a separate application to the Arts Council. Yasmin and Jurgis have put in an application for £12k to develop this project and should hopefully hear the result of this bid by mid September. If these funds are not available, Peter James had set aside £3k from his £15k budget to allow Yasmin Baig and Jurgis Lucas to develop a scaled down version of the Directory for inclusion in the project. Andy Mabbett questioned the life scale of the Directory and how it would be maintained. Andy Mabbett suggested that they should be cautious about maintaining material on other peoples behalf. It is better to provide links to organisations own discrete sites, rather that attempting to maintain their information for them. As the future about Photopack is uncertain Yasmin and Jurgis were unable to give clear responses to this aspect of the project.

***Assist* and its remit**

Andy Mabbett and Des Farrington explained that whilst they are now housed in the Central Library their remit is in fact city wide. The Library's Internet Officer, Anthony Blagg, has responsibility for the Library's material on the Internet. Other departments, ie Transportation, will soon have their own Internet officers who will liaise directly with Andy Mabbett and Des Farrington. In addition, there is a tier of personnel who have responsibility for the contents of the Keypoint system. Andy Mabbett and Des Farrington suggested that each of these individuals should be notified about the project as a matter of information and courtesy.

Marketing the site

Andy Mabbett said that he and Des Farrington would be able to advise on the marketing of the material, both on-line and through traditional means. A snappy URL can be created in order that the material can be found relatively easily.

Changes at *Assist*

At present the *Assist* pages are being moved from the Birmingham University server to the city's own dedicated server. In addition, Des Farrington mentioned that on 14 August the *Assist* pages will be connected to the city's Intranet server, which will in turn be connected to an Internet server. Partly as a result of these developments Des Farrington and Andy Mabbett said that they would be very busy in the next couple of months and that they would be able to work more effectively on the project in the New Year.

Draft Paper

Digital Photography / History Van Project 30 October 1996

Background

This paper has been written in response to the ongoing work utilising the History Van by Birmingham Library Services. After a number of discussions between Peter James, Head of Photography, Richard Albutt, Community History Development Officer and myself it has become clear that to fully explore the potential of the History Van and the adoption of the world wide web, through the exploitation of the city council Assist pages, a discreet and focused project should be adopted. This draft paper outlines the basis for a project working with the immigrant population of Birmingham. The project will utilise photography as its central focus although the work may inform decisions made by the Library at a later date when considering the acquisition of commercial software and hardware packages (ie Heritage 2000 project) which may be appropriate to the work of the Local Studies and History section in a broader context.

Proposal

The core of this proposal will centre on the acquisition of photographic memorabilia belonging to the immigrant population of Birmingham. The History Van, with its ability to provide mobile scanning and digitisation facilities, will provide a unique opportunity to acquire photographic material associated with the first mass arrival of immigrants in Britain, and specifically Birmingham, in the 1940's and 1950's. The progression of time, with many of these individuals now elderly and possibly infirm, makes the acquisition of this material at this time all the more urgent.

Rationale

This proposal dovetails with efforts by the Community History Development Officer to develop working links with the elderly in day centres and other places of care. In addition, West Midlands Arts has in recent years provided funding to the Library to commission new photographic work by photographers representing ethnic groups. This proposal will supplement and complement this work by providing historical photographs taken by and of ethnic groups on their arrival in the city. It is hoped that the photographs acquired might recall the experiences of these groups in their homes, at work, at school and so on. In addition, Birmingham developed a thriving studio portrait industry catering specifically for the needs of the city's immigrant population. The work of the studio photographer Ernest Dyche already forms an important part of the Library's collections.

Strategy

For this project to evolve coherently a strategy will be adopted to provide a framework for the successful undertaking and evaluation of the project. This is made all the more important due to the fact that the project will in part rely on the co-operation of outside bodies, such as the Department of Computer Sciences at Birmingham University who will be responsible for authoring the web pages and the dissemination of the material through the use of telematics. In addition, outside agencies such as the managers and staff of day centres for the elderly and others offering social services will be contacted

project.

The duration of the project is expected to be one year. It is proposed that the project adheres to a number of key phases.

Phase One

The initial phase will include a critical appraisal of the work undertaken with the History Van since its adoption by the Library four years ago. It is expected that this analysis will help inform the project as it evolves and help to provide a clear idea of the strengths and weaknesses associated with working with the vehicle. The first phase will also involve preplanning, drawing up lists of potential communities with whom contact may be made and devising the forms and other information that will be of use when the photographic material is collected and collated. In addition, this initial period will allow some preparatory work to be made on the design of the web pages and for technical considerations to be explored and appropriate work undertaken. The initial phase will also provide an opportunity to examine previous work undertaken by the Library around the acquisition of photographs by members of the public. The Peoples Picture Palace was one such project undertaken in 199? and it is expected that this project will provide a firm foundation on which to build this proposal. Indeed, some images collected as a result of the Peoples Picture Palace project will be selected to provide an initial taster of the types of images the authors of the project would like to collect. In addition it has been proposed that this project might provide a good opportunity to compare and contrast the work acquired with that of the photographs commissioned by the Library from photographers representing ethnic minorities in recent years.

Phase Two

The second phase will entail the acquisition of images by taking the van to a number of carefully selected locations. Once scanned these images will be transferred to the world wide web by the Computer Sciences Department at Birmingham University. The author has been advised that a third year student, Ian Stephenson, will be adopting this project as part of his final year studies. It is expected that Ian will work closely with Mark Robbins in the Assist office.

It is hoped that the material will provided on the world wide web will form the basis of a two way interaction with interested parties both locally and internationally. Indeed it is hoped that the dissemination of the photographs through the adoption of the world wide web will lead to a number of unique and otherwise unrealisable interactions between the owners of the photographs in Birmingham and their contemporary counterparts residing in their home countries. For example, the project might explore the potential viability of member of the Greek community in Birmingham entering into a dialogue around the photographs with individuals viewing the photographs on the world wide web in Greece. Such interactions will provide a unique insight into the importance of the photographs and possibly lead to a critical reappraisal of the images that will form an important part of the Library's collections.

To encourage participation and interest Richard Albutt has suggested that it would be expedient to give participants hard copies of photographs held digitally. A laser printer would be required on the van for this purpose.

Phase Three

An interim review of the project will occur part way through the year . This will examine the progress of the project, how it may be improved, the work concentrating on the web pages and any gaps in terms of the material collected.

Phase Four

Whilst it is recognised that work of this nature could be ongoing and other projects may evolve as a result of undertaking the project, it is important that the project in its present form is concluded. Following the conclusion of the project the fourth and final phase of the project will be an evaluation of the work undertaken. This in part might inform the later work undertaken with the History Van and the adoption of digital photographic technologies by the Library.

Summary

Phase One

Nov 96- Jan 97	Project finalised Review of History Van work undertaken to date Preliminary work undertaken: Peoples Picture Palace images selected and scanned Initial work on www interface undertaken Community contact sought

Phase Two

Feb 97- April 97	Project commences

Phase Three

May 97	Interim evaluation and appraisal Project direction shifts if necessary

Phase Four

September 97	Project concludes Project evaluated

Possible Communities to approach

Irish
Greek
Jewish
Italian
Serbian
Chinese
Afro Caribbean
Asian: Kashmiri, Muslim. Hindu,

Appendix 7

Images of Transition Letter to possible participants

17 December 1996

Dear

I am writing to you to enquire whether you may be interested in a new project that the Library Service is currently organising involving displaying peoples photographs on the Internet

For the past three years the library has been using its History Van to digitally copy photographs that belong to the people of Birmingham. Please see the enclosed leaflet. Recently a selection of these images were put on the Internet for people all over the world to see and comment on using e-mail. In the New Year we are hoping to expand this project by copying and displaying photographs from the different communities that now make up the city of Birmingham again via the Internet

The theme of the project will be "images of Transition" as we are hoping that people will allow us to use their photographs which deal with their experiences of moving to Birmingham. For example, the photographs may depict leaving home, travelling, arriving in Birmingham for the first time, setting up new homes and establishing new communities.

The new technology on the History van allows us to copy photographs straight away, with the original copies being handed back immediately. We will not need to take the photographs with us so there is no danger of them being lost.

Once we have collected enough photographs we will make a selection available on the Internet, with text, so that they may be seen by people all over the world. We are hoping to run the project from February to August 1997. If your group becomes involved we will come with the History Van to your normal meeting place and copy the photographs there and then.

If you feel you would like to be involved in what we hope will be an interesting and enjoyable project please contact me on 0121 235 3390 or return the attached slip to me. If you know of any other groups that may be interested please pass this information to them.

Yours sincerely

Richard Albutt
Community History Librarian

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